

Dedicated with love to Diti.

In every job that must be done, there is an element of fun. You find the fun, and - SNAP - the job's a game!

- Mary Poppins.

All rights reserved to Nir Strulovitz , March 2015 , Haifa Israel.

Table of Contents

Introduction - How I (almost) saved the world	4
Lesson 1 - The dark side of formal education.....	4
Lesson 2 - An outsider viewpoint	5
Lesson 3 - The secret power of ADD	5
The Guiding Principles	7
What's ADD like?	7
No immediate results	8
Children - Development and Enrichment	9
Encouraging natural curiosity	9
Games teach skills.....	10
English with musicals.....	12
Classical music for thought.....	13
Art develops creativity.....	14
Trips open horizons.....	15
Nurturing brings talent	17
Tales improving language.....	18
Hobbies for a sense of achievement.....	19
Youth - Learning and Training.....	21
Nerd's Guide	21
Food for thought.....	21
One step ahead	22
More visual	23
Black box	24
The demo scene	26
Denthor and LaMothe.....	27
Spiral shaped learning	28
Synergy between subjects.....	29
Learning supporting hobbies	30
Thinking through examples	32
Ignoring teacher's personality	34
Inspiration for action	38
Adults - Work and Creativity	39
Building the Dream - The Websites	41

First Generation.....	41
Video homework help	41
Commentary for textbooks	42
History of science adventure game	43
Do it yourself experiments.....	46
Exciting interactive quizzes	46
Second Generation.....	47
STV	48
Videobooks.....	49
Tutor.....	49
BUDS.....	50
Business Model	52
Frequently Asked Questions (FAQ).....	56
Real World Examples	58
MacGyver - Science and engineering for children.....	58
Sherlock Holmes - English vocabulary for children.....	61
Algebra 1 by The Teaching Company - Algebra for high school	64
system of equations 1	64
Pythagorean theorem	66
Radical Equations	68
Once Upon A Time ... Man - History for children	70
The Hitchhiker's Guide to the Galaxy - English Grammar for high school	73
C Primer Plus by Stephen Prata - C language for the university.....	74
Reality Check - Public Reception	79
First Generation.....	79
Second Generation.....	81
Summary	85

Introduction - How I (almost) saved the world

One day when I was in high school, I was sitting in a biology class. The teacher told us that soon there will be plagues. She explained that this is because the bacteria become resistant to the current antibiotics medicines. This is because the bacteria are changing (mutating) faster than we can produce new antibiotics.

I told her that we could take the "bad" bacteria, and grow them in large numbers inside closed tanks on some substrate. This way something will be created all by itself, that eats those "bad" bacteria. This something will be a parasite on the parasite, so let's call this something - the "good" bacteria. Then we will isolate and grow the "good" bacteria, and this will be the cure!

How will this miracle happen? Imagine a village full of naive people. Now suppose a crook shows up in this village. The crook can come from outside (contamination) or from inside - born different from his naive parents (mutation). Now what will happen? The crook feeds on the naive people so he will flourish (because there are so many of them there), and multiply creating more crooks like him. In this metaphor, the naive people are the "bad" bacteria, and the crooks is the "good" bacteria.

The teacher put me down and told me I was totally wrong. This can't work. If this could work, someone would already have done this. And she never heard of such a thing.

About two years later, while I was in the army, I was watching a program by BBC2 and Horizon on television. The program was called "Phage - The Virus That Cures". You can watch it on Youtube here: <https://www.youtube.com/watch?v=mqlrSO-bgrY> . This program was describing the exact same thing that I was talking about in theory - working in practice!

The program showed that scientists in the former USSR in the Republic of Georgia found that the water of the river contained "bad" bacteria (through human feces), and natural evolution developed "good" viruses that live on the "bad" bacteria. These viruses cure the diseases that antibiotics can't cure!

The programs said that these viruses that are called "bacteriophage" or in short "phage", may hold our last defense against super-bugs that can wipe out the whole human race!

What lessons can we learn from this story?

Lesson 1 - The dark side of formal education

The teacher had an academic degree from the university in biology. She was probably forced to learn, to memorize a lot of facts for exams only to spill it out on paper afterwards and to forget it later. She probably didn't enjoy and didn't find real deep interest in what she learned. She did it because she had to graduate to get a job. For her the subject was perfunctory.

On the other hand, I was reading for fun as a teenager all the books by evolution expert Richard Dawkins (The Selfish Gene, The Blind Watchmaker), that I could put my hands on. I enjoyed the books and hung on every word he wrote and the deep principals engraved a

lifelong impression in my mind. These readings became a part of the way that I think. For me the subject was alive.

The moral of the fable:

Intimate touch with the problem is the key. Not only does this mean that you spent years thinking about the problem, and that you have the highest motivation to solve it. It also means that it becomes part of your thinking and you can analyze it intuitively. That's why an enthusiastic autodidact might find a better solution than a learned formal professional.

I'm always skeptic about "professionals" in special education for ADD. These professionals never felt what ADD is really like, personally. On the contrary, they excelled in school and later in the university. They all read about ADD in books, and know what it's like in theory, but never felt it. Would you train with a football coach that never actually touched the ball?

When I (as a person who has ADD) develop learning aids, I'm seeing them all the time from the perspective of someone with ADD. For example I don't need a complicated set of rules to tell me if a slide in a presentation will be clear or not - I can simply tell because I experience it firsthand. It's not clear unless it's clear to me.

Lesson 2 - An outsider viewpoint

The teacher was instructed according to the traditional doctrine. The problem is microbes - You should use some chemical (Antibiotics). It never occurred to her that you can use a living creature - another microbe, because this was never in her book.

The moral of the fable:

If a problem is not routine, which means if a problem can't be solved by the usual tools of the trade, there's an advantage to someone that comes from outside of that professional field because he brings a new viewpoint and can bring solutions from "outside of the box".

Lesson 3 - The secret power of ADD

Wait, what power? isn't ADD a bad thing? Yes, but if used right it can also give you an advantage. I'll explain.

The teacher no doubt knew a lot more little details than I did. She was able to memorize a lot of names, figures, etc. But all these details kept her from seeing the bigger picture.

My ADD way of thinking, because I can't focus on the small details, goes straight to the heart of the problem. The heart of the problem was that living things change very fast. what changes as fast as living things? living things!

The moral of the fable:

Because of my life-long problem with concentrating in the small details, I had to develop a "bird's eye" view and I had a life-long practice in finding out the general principal behind detailed phenomena. I try to see the forest for the trees. That means to discern an overall pattern from a mass of detail.

What is the heart of the problem with ADD? It's not that we can't concentrate at all. It's just that we can concentrate only on something that we find very interesting. So the obvious solution is to take the learning material and turn it into something really interesting!

I would like to give you two metaphors, for the way I see it. The first metaphor is from the world of chess. A computer calculates millions of possible moves. the human chess master concentrates only on the heart of the problem.

In a similar fashion, people with ADD can only concentrate for a little bit so they develop (out of necessity) a straight to the heart of the matter thinking, where all the pesky details gets "sorted out" through mental extrapolation.

When I started programming, in the middle of the 1990's, It was the time of the 386 computer chip which was a very big thing because it used floating point math. but with hard work and patience, you could do the same things on the older chips, by emulating it using fixed point math.

ADD is like that. We don't have the necessary chip, but with the correct algorithms (which I'll give you) and a lot of hard work, we can reach the same achievements just like anybody else. And once you get there, you might even benefit from your different way of thinking.

I wish you an enjoyable and useful reading!

Nir Strulovitz.

The Guiding Principles

Now we'll start going over the underlying principles of my system for overcoming ADD or ADHD. These are basically all the tips and tricks that helped me achieve my success. They're all coming from my hard-earned experience over many years. This is why I'm confident that you too can use these methods and techniques to achieve your own goals.

But first I want to emphasize two important points. The first is what is ADD like. This is useful for someone who's reading and does not have the disorder. To deal with the problem it's important to have a correct mental model of it in your head. The second point will be a word of caution about the proper use of the system for people who seek immediate results.

What's ADD like?

Usually when people imagine ADD they think about "ants in the pants". A person who can't sit still and jump from subject to subject. While this is certainly true (especially for ADHD), it doesn't tell you what the problem is. Because as a normal person you assume that such a person will just be good in multi-tasking, because they got fast "switching" from subject to subject, and they continue from where they previously left afterwards.

This is not the case in ADD at all. ADD simply lose their line of thought without being able to get it back. In my experience, a much better way to explain the difficulty to a person without ADD, is to see the movie Memento. There the lead character suffer from a special kind of amnesia (memory loss), that allows him to remember things he learnt a long time ago, but doesn't enable him to create new memories for more than let's say 15 seconds.

ADD in actual is exactly like that, albeit through a totally different mechanism. In the bottom line, you can't concentrate for more than a few seconds. By the time you read through to the end of the line or the end of the equation, you no longer remember the beginning. By the time of the second chapter of lecture, you don't remember the first. Only the things that you managed to assimilate into your "bank" in those few seconds (like the hero of the film takes a picture with Polaroid camera and label it for future reference) stay with you longer.

This image of the disorder will later become useful for us, when we develop our way to bypass ADD. We'll teach the material in a way that it becomes a part of you through deep understanding, using the equivalence of mental pictures, for each concept that we want to learn. We'll break up complicated ideas into simpler stages and the teaching will become an exercise in creating the correct intuitive notion inside the student's mind. To continue the metaphor: after each "picture" (concept) will become clear, we'll be able to "zoom out" and create a custom made "collage" and see the combination of all the partial ideas all at once.

Let me try to explain this in another way. The point is to build the whole learning process so that there is nothing to remember, only to understand. On each stage the student understands another key element and it becomes one of him or her. And then the next step is built on top of that in the same way, until the whole chain of ideas becomes your own.

All this will become clear as we get along and see real examples of lectures in action.

No immediate results

The Strulovitz System is a long process you have to go through in order to win over ADD/ADHD without drugs. You can't pick up the book a few days before your exam and hope to learn some magic trick. The Strulovitz System process is divided into age groups. In each stage of life we focus on the most effective course of action in that specific stage. Of course the ideal thing is to start when you're very young and follow along life, but don't worry, you will benefit a lot from applying what you learn here as an adult too.

Children - Development and Enrichment

Encouraging natural curiosity

When I was a child of about 5 years old, the Smurfs craze was at its peak. the cute blue cartoons were everywhere. Also when I was a child was a flood of cheap merchandize from Hong Kong, especially small electronic gadgets. So the result of these too trends was that my parents bought me a Smurf watch with a digital display to tell the time.

The very next day I took a small hammer and broke the watch to pieces. My mother was upset but my father was happy. For him this was the sign of healthy curiosity the same quality that every researcher requires. He realized that I did not want to destroy the watch, I just wanted to understand how it worked. Since I didn't know of about a screwdriver, let alone a watchmaker screwdriver, I tried to open it using the primitive means that I did know.

On the other hand, if you discourage the first attempt to self learning, the pattern in the child's mind is set to less inquisitive, and they won't have the intellectual courage to explore new things. In life today you can't stick to only what you know, you need to constantly learn new things.

That same curiosity got me the courage to learn the beginning of electronics about 15 years later. how did this came to be? In Israel we have to do serve in the military for 3 years (girls do 2 years). I asked very much to be a programmer, but the army never gives you what you want. If you have the maximal medical profile like I had, they put you in a field unit. I was allocated to an electronic warfare battalion in SIGINT.

The battalion was horrible for me, because everything we learned (the course was 6 months) was so arbitrary: Flip that switch, rotate that dial, punch in this number. Because of my ADD I have real trouble to memorize lots of tiny details that don't have a unifying principle that I can understand and reconstruct in my head. Adding to this was the lack of sleep. Even normal people when they don't get enough sleep show symptoms of ADD. Every night we needed to "guard" the armory and the gate although we were inside a much bigger camp (Tzrifin).

The ADD together with the lack of sleep and interest, created a vicious circle. I was unable to follow orders properly; I performed poorly and got punished - not getting home; The moral got even lower and the motivation reduced further. Than I was sent to Gaza border to check trucks coming into Israel which also wasn't much fun. But when I came back to the battalion I had a very nice surprise.

At the same electronic warfare brigade we had what was called the technical branch. They created all the equipment that the battalion operated, some independently and some by Israeli electronics companies. They were entirely made of engineers (who learn 4 years) and practical engineers (who learn 2 years).

I was very lucky for a specific chain of events: The technical branch needed more programmers, but they were not allocated any until the next year. A friend named Yuval "Yuvi" Nevo from my course was asked by the Command Control Computers and

Communications (C4) department head there, if he knew anyone of us who knew a little about computers. Yuvi told him about me and deliberately exaggerated as if I were Bill Gates. So they asked me for an interview, and soon enough I was transferred to the technical branch.

For me this was like moving from hell to heaven because In the technical branch, life was utterly different. It was run like a civilian high tech company except we all wore military uniform. So in the technical branch I talked once with a friend named Shay Hefetz that I feel frustrated that I don't know anything about electronics. So he gave me a beginners book which was very interesting, and in it I also learnt about how you make a Seven Segment Display which answered the Smurfs' watch question from back when I was five years old!

If anyone is interested how I became a programmer in the army, because as you remember I didn't get to do the 6 months course of an official programmer, I did something else, so here it is in a nutshell.

At first my job in the department was creating user interface screens in "magic" which was in Israeli fourth generation programming language. For me this was disappointing because you didn't get to write code at all! Then a friend named Nir "Bamba" Benmoshe who was an official programmer and who was my supervisor, knew I wasn't a disappointed about working with magic, and he also knew that I liked graphics stuff (You can read a lot more about that in the sub-chapter "black box"). So Bamba asked me if I could make a small program that would display a picture on the screen in DOS, that would be the opening "splash" screen for a command & control program that Bamba built.

After I did it, one of the officers asked if I did this by myself, and then he said that if I can figure out the internals of a BMP file, I can figure out how to help them with building a communications simulator.

This was extremely cool because from now on I was doing real programming in Visual Basic (They worked in Visual C++ but it was too complicated for me), and also once they were convinced that I'm worth it, they spoiled me with short one-week courses both in the IDF's computer unit (Mamram) and in civilian training companies like "High Tech College" (today John Bryce). Also they gave me a lot of books, online tutorials, etc to read, and this is how I eventually turned out to be a professional programmer.

Games teach skills

If you watch young animals in nature, they learn by playing. The games they invent for themselves mimic the behavior of the adults and develop the necessary skills. The same is true for humans. For an infant, whose job is to grow and to learn about the world, work is play and play is work. There is no difference between them. This is the most natural way of learning.

When I was a small child, each time my father got his salary from work, he would buy me a new game - without me ever asking for it - I was spoiled because I was an only child, and because he knew that playing with games when you are a child contributes to your mental

skills in solving problem, patience and dedication. When I was a child we had at home all the technical Lego kits that were available for purchase. Some of them are still around, like the electric engine kit, the pneumatics (compressed air pump) kit, a complete car with a gear system, and so on.

Lego in my opinion is the perfect toy (as long as there no danger of choking on the parts). It introduces you to using a manual long before you can read. It trains you in eye-hand delicate coordination. You can build anything, the only constraint is your imagination, and there is no right or wrong. It really is in my opinion the gate to engineering. It teaches you about doing things in certain order, and by the book (again, long before you can read). It teaches you about restoring the used parts back to their specific place in order (or else you wouldn't find them the next time you need them). All of these things are not interpreted by the child as work, but rather as a very enjoyable play time.

And of course my father bought me a lot of other games like a complete electric train, trivia games, jigsaw puzzles and so on.

I think it's important to introduce the games as early as possible and then re-introduce them, and then when the child is ready he or she will embrace them by him or herself. Waiting until a certain age may result in wasting precious years.

Also games teach you a lot in terms of social skills, for example at an early stage, when I lost in a game I would cry. Then my parents will also pretend to cry so they made me realize by personal example that it's unnecessary and silly. So games give the child self-confidence and communication skills, and a lot of useful skills.

When I got a little older in primary school, It was the middle of the 1980's the personal computers revolution entered people homes. My father bought me a Commodore VIC-20. At that time the games were recorded on audio cassettes that you would put in a tape, that was long before diskettes! There wasn't even a monitor - the computer (that was wholly contained in the thick keyboard) connected with a cable to the living room television and used the TV as a screen. It was very cool and I played a lot with a joystick.

Then a while later the my father bought me a Commodore 64 which had much more stronger, and had a lot cooler games. My father being himself a programmer in his military days back when they used punched cards and got the results the next day on paper, tried to get me interested in programming the computer, both in Basic (it's funny but this was the language that I ended working in when I was many years later a programmer in Elbit Systems, I used Visual Basic on Oracle database) and in Logo programming languages. We set together and he would show me and there were very nice graphical things, but I didn't get hooked on programming, until I was about 16 (more on that in the sub-chapter "black-box").

My father always put an effort into getting me to like computers, because he recognized (we had no idea about ADD back then, I was top of my class in primary school, and no one knew what ADD is anyway) that my line of thought is disorganized, and he reckoned correctly that dealing with the computer (ideally programming, but even just playing), would force me into

channeling my thoughts in a constructed and organized way. The computer is not forgiving and understanding if you forget something - you have to do it all over and get it right. My father printed manuals for me, and also he took me to a friend's house who was really into the personal computing hobby, and we would copy new games from him. In the years that followed my father always bought a strong PC for me, recognizing its importance.

The overall impact of these experiences was immense for my future life as a programmer and in all my technological endeavors including The Strulovitz System itself, and also my current projects and what I do for a living now.

You can read more about the positive influence of games in the sub-chapter "Learning supporting hobbies".

English with musicals

Note: My apology to the English speaking reader, this specific sub-chapter is meant for people who learn English as a second language. But you can still apply it to a certain degree even for other major languages, for example I learnt many words in French through my love for French chansons by Édith Piaf, Jacques Brel, Gilbert Bécaud, Charles Aznavour, and Georges Brassens.

Imagine an English language class, in which instead of the boring teacher reading from a book, you could have the best actors and actresses in the world play it vividly in front of you, dressed in costumes from the era when the story takes place, and in the backdrops would be the actual places where the story unfolds all recreated in a grand scale and brought to life.

Imagine further that all these artists will not just recite the words like in theater, but rather sing it like in the opera, but with catchy tunes composed by the leading musical composers of our time. Instead of memorizing songs from commercials on TV, children would effortlessly remember these songs that would be comprised out of proper English language rich with idioms and content, written by the best lyricists and poets. How much more pleasure and knowledge of English language will the children absorb?

Now stop imagining and go rent a musical movie from the nearest DVD library! Musicals are the ideal vehicle to get the English language to children who learn it as a second language. The whole idea of learning a new language is remembering it, and what media creates more unforgettable moments than musicals?

These musicals gave us Eliza Doolittle's breakthrough in "The rain in Spain" in My Fair Lady; Tevye's dream in "If I were a rich man" in Fiddler on the Roof ; The all American farm in "Oh what a beautiful morning" in Oklahoma! ; The seedy nightlife in "New York New York" in Cabaret ; The stylized racial tension in "I like to be in America" West Side Story ; The touching "Mr. Cellophane" by Amos Hart in Chicago ; Dolly's welcome home in Hello, Dolly! ; Fantine's dream in "I Dreamed a Dream" in Les Misérables 10th anniversary dream cast ; The haunting "**Bali Ha'i**" in South Pacific ; The brave "Climb Ev'ry Mountain" by the Mother Abbess in The Sound of Music ; Fagin's second thoughts in "Reviewing the Situation" in Oliver! ; Dorothy dream of "Over the Rainbow" in The Wizard of Oz.

For the younger children and as a stepping stone on the way to grown up musicals, there is the wonderful animated musicals by Disney.

These masterpiece films create such magical moments in your childhood, that you remember them (and the English with them) forever: Pinocchio who's cricket song "When you wish upon a star" is the song most recognized with Disney ; The Sleeping Beauty who's "Once upon a dream" is the song second most recognized with Disney ; "Bibbidi-Bobbidi-Boo" which the Fairy Godmother sings in Cinderella ; Alice in Wonderland's many short tunes like "I'm late" ; "Following the Leader" by the lost boys in Peter Pan ; "Cruella De Vil" by Roger in One Hundred and One Dalmatians ; The jazzy "The Bare Necessities" of Baloo from The Jungle Book ; The Little Mermaid with Ariel's "Part of Your World" - By the way, this was the debut appearance of the perfect duo: the genius composer Alan Menken and the superb lyricist Howard Ashman, who brought the "Disney Renaissance" : Beauty and the Beast with the dishes singing the extravagant "Be Our Guest" ; Aladdin with the Genie's amazing "Friend Like Me" ; The Lion King which I didn't like but many people do ; Pocahontas with the superb "Colors of the Wind" song ; The beautiful "God Help the Outcasts" by Esmeralda from "The Hunchback of Notre Dame" ; The brave Mulan's "Reflection" ; Tiana's ambitious "Almost There" from "The Princess and the Frog" which brought the "new Disney Renaissance" such as the immediate modern classics Tangled and Frozen.

A combination of these two wonderful worlds is Mary Poppins which combines both a real acting and animation (like the excellent Pete's Dragon with "Candle on the water" also by Disney). Mary poppins also coined the phrase "A Spoonful of Sugar Helps the Medicine Go Down" after a real story that happened to one of Robert Sherman's (the lyricist of the movie) children. The child got a polio vaccine that day. Robert thought that the child was given a shot. The child replied that the medicine was put on a cube of sugar and that he swallowed it. This motto of the movie with it's very extended meaning could be also the motto of The Strulovitz System, and hence appears in the very beginning of the book:

In every job that must be done, there is an element of fun. You find the fun, and - SNAP - the job's a game!

Classical music for thought

When I was a small child my parents played on the record player (electric turntable gramophone) many gramophone records (vinyl records) of all the famous classic composers. My personal favorites from that period in my life are Scheherazade by Nikolai Rimsky-Korsakov, and Peer Gynt by Edvard Grieg. Classical music is widely recognized by musicians as the crowning achievement of humanity in the field of music composition. The sophistication and mathematic-like structure of masterpieces from that era, were also promoted by many famous scientists. In my opinion it is also true that many famous scientists developed their right brain hemisphere as children by listening to such music.

What my parents were aiming (in addition to a pleasant experience) for was what would later be called The Mozart Effect. It was later proven in scientific research that listening to classical music like the music composed by Wolfgang Amadeus Mozart can improve the performance of the "spatial-temporal reasoning" in the brain for a short time (so imagine

what prolonged listening over years can do). It is also said that it can positively influence your IQ. In fact some states in the US like for example Georgia give the parents of newborns free CD's of classical music to play for the young infant at home.

As for actually playing classical music, this can also be done with positive results at a much younger age than most people think possible. This was demonstrated by Shin'ichi Suzuki who developed The Suzuki Method for teaching young children to play on a scaled down version of the instruments. Suzuki was a violinist but the system was adapted to all the major classical instruments. When I was an infant I wasn't exposed to this but I did like to use pots and pans as percussion instruments, and my parents did bought me a Xylophone.

My mother did went with me to an organ teacher for a year when I was about 6 or 7 years old, but it wasn't a great success: I hated it (although my playing was good) and I was practicing and crying. When I was about 16 I asked my parents to buy me a classic guitar and I learned also for a year with a guitar teacher, but this time it was of my own accord and I enjoyed the experience.

The Suzuki Method bears a close resemblance to another Japanese system from the man who co-founded Sony Masaru Ibuka, who wrote the book: "Kindergarten is Too Late". This visionary book which I read as an adult, says that the critical years are approximately between the ages of 0 and 3 years old. In that stage the new born still makes connections in his or her brain and the brain can create new brain nerve cells (neurons). After that age we can't get smarter. So he urges to teach languages (more than one simultaneously) and so on in that very early age. This was a book that my parents read and tried to implement on me, and I have no doubt that this had a very positive effect on me.

Art develops creativity

Note: In this sub-chapter I'm talking about painting and drawing but of course by that I mean all forms of art.

In the western civilization we admire people like Leonardo da Vinci, who was a Renaissance Man. This means that he was a polymath with expertise in many different fields. In our modern times it's considered impossible, to have an ordinary profession and also to practice arts. In our specializing society, art is also reserved only for the specialists. But in more "primitive" cultures, everyone does everything. The average person there hunts, fishes, gathers, builds shelters, and also paints and carves and dances and sings. In modern culture we are deprived of our birthright to express ourselves through all arts.

In art the child can experiment totally freely, because there are no strict rules. It is the perfect place where the child can explore and get encouragement and compliments because no one can really judge. Of course the child cannot be Rembrandt in this young age, but he or she can definitely outdo the modern painters like Picasso, Kandinsky and especially that Jackson Pollock guy. That's the beauty of art, that there is no right or wrong.

It's important also to encourage the child to experiment with different techniques. For example the child might start painting with Gouache paint or Oil pastel (wax oil crayon) or color pencils. But later can try also more "advanced" techniques like water paint, oil paint,

and Charcoal. A very inspirational television show for children in the context of art was "Vision On" by the BBC. You can find a few chapter on Youtube. This was a program for hearing impaired children which was very visual and creative, but is delightful for all.

Of course when you introduce your child to art you can also sneak in little by little concepts that will support his or her scientific ability in the future, like perspective or reflections or enjoying drawings by M. C. Escher which feature impossible constructions, explorations of infinity, and tessellations. Richard Feynman once said in an interview that his father would present patterns with colored tiles to him when he was an infant, to strengthen little Richard's feeling for patterns which of course he used in his work as an adult.

A word of caution though from my own experience: I loved drawing ever since I was little, especially with oil pastels. My parents told me that once I came out of the hospital and the first thing that I asked for was to draw. later in my primary school there was an after school hours course where the teacher tried to expose us to different concepts each time, like copying a cartoon, or sitting outside and paint the outline of tree branches. I liked this course a lot.

Then the teacher had to leave and my mom found another course for me in a professional art school nearby. There it was a lot more formal, for example they wanted me to paint on big A3 paper instead of normal A4 and on canvas instead of paper etc. And that's when I quit drawing all together. So my point is don't force them into anything - It's supposed to be fun!

Trips open horizons

When I was little child aged 3, my mom and dad wanted to go on a trip to Europe. So my parents asked my grandfather and my grandmother (my dad's folks) to take me in for two months. My grandpa and grandma were very old fashioned and considered travelling as the ultimate form of taking good money and throwing it to the wind. They believed only in things that you can keep as an asset. So they refused, convinced that my parents will back off from the trip idea themselves (because they will not have anywhere to leave me).

Instead my parents decided to take me with them. This took a lot of courage because: (1) Remember that back in the beginning of the 1980's nobody travelled with a child for a trip abroad. Parents considered the child a complete nuisance to their enjoyment of the trip. Everybody warned them that I will cry all the time and ruin the trip (2) This was their first trip and already it was very unconventional - it was not organized with a group, my dad arranged it alone and they did not have anything booked except a plane ticket to Europe and a plane ticket back to Israel. (3) At that time people would go alone maybe for a weekend in some major city and back here. They planned to rent a car and for 2 months travel all around Europe from country to country. This was before the EU so each country had another currency etc. (4) This was before the internet, before guidebooks (in Israel), and the only thing that they could find was a guidebook in Hebrew with a few words on each place, and a few maps.

So my parents took me with them and as always treated me like an adult (which was their attitude for me since day one that I was born). I had my teddy bear with me always and a small set of crayons to draw with. The places themselves weren't all for children like Dachau

concentration camp or the Louvre Museum. But some of the places were visited specially for my sake, like Efteling park.

This was exactly in the age that I heard a lot of legends and for me they were still true, so the whole visit in the Fairy Tale Forest was magical. Another fantastic place was Legoland where we also bought a toy Lego ship and sailed it later on in the trip in the water of some Fjord. Again this was at the right age when Lego was the coolest thing for me.

Each time when we were in an adult place my parents explained to me that here we need to be quiet and it's for them, and later we will go to a place which is for me. This arrangement worked very well and it set the tone for all of our next trips. Of course some places were amazing for all ages like the Floriade in Amsterdam which is a huge exhibit of flowers.

We would cut expenses by sleeping in motels or bed & breakfast, in each one I had the task of finding a den (shelter) for my teddy bear and also locating the garbage bin. And when we left the place my job was to crawl and look under the beds making sure we didn't forget anything behind. We would also buy groceries in the market or grocery store and my mom would prepare the food for us. For example I still remember the scrambled eggs made with the gouda cheese that we got in the cheese market in Alkmaar.

This successful trip gave my folks the courage to go almost each year in the same format: Two months leave from both their work places which were luckily big corporations that made it possible. The timing was always optimized for the best time of year for the destinations to visit, so most of the times I missed school. One smart teacher of mine told my parents once: "He will learn from the trip a lot more than he would learn at school!", and she was right. My father would plan the trip and do most of the driving, my mom do the navigating with the maps (that was before GPS) and me sitting in the back seat of the car.

I can say that we travelled a lot, but I think it's more fitting to be more detailed. So here is a concise list of our family trips abroad. [family] means all of three of us. [parents] means just my mom and dad. [me] means just me. Before I got into the army everything was with me, except "exotic" places when I was too little and they were afraid I'll get sick.

1982 Europe [family] ; 1983 USA Canada Hawaii [family] ; 1983 Egypt [parents] ; 1984 Far East [parents] ; 1988 Kenya [family] ; 1991 Round The World 1 [family] (Bangkok China Hong Kong Australia New Zealand Tahiti L.A. Mexico Brazil Argentina New York) ; 1992 Ski Zinal [family] ; 1992 South Africa [family] ; 1993 Antarctica & Patagonia [family] ; 1994 Caribbean cruise + Mexico + Yucatan [family] ; 1995 Round The World 2 - Alaska Australia (supplement) Papua New Guinea [family] ; 1996 "Walking Switzerland" [family] France Swiss Italy ;

After I got into the army my parents travelled without me in more upper class but shorter trips, for example skiing or cruise ships :

1997 "Silver Wedding" Caribbean cruise [parents] ; 1997 Indonesia [parents] ; 1998 Lapland winter vacation [parents] ; 1998 Greece & Islands [parents] ; 1998 Turkey [parents] ; 1998 Sinay & Petra [parents] ; 1999 Rio Carnival + Rome [parents] ; 1999 Ski Alpe d'Huez [parents] ; 1999 Spain + Portugal [parents] ; 1999 Russia [parents] ; 2000 Berlin + Czech Republic + Romania [parents] ; 2000 North Pole (with a Russian nuclear ice-breaker!)

[parents] ; 2001 Ski Cortina d'Ampezzo + Carnival of Venice [family] ; 2001 France Chateaux [parents] ; 2002 Ski Lech + Carnival of Venice [parents] ; 2002 Rhodes [parents] ; 2003 Ski Cortina d'Ampezzo + Carnival of Venice [parents] ; 2003 Croatia + Slovenia [parents] ; 2004 Burma Vietnam Cambodia Thailand [parents] ; 2004 Peru & Bolivia [parents] ; 2007 China Winter (supplement: Harbin, Yuanyang) + Tibet [parents] ; 2009 Ski France La Plagne + Ski Swiss Zermatt [parents] ; 2010 Ski St. Moritz [parents] ; 2010 Rhine castles + Paris Ritz [parents] ; 2011 Cruise Panama Canal + Las Vegas area [parents] ; 2012 Ski Obergurgl + Aqua Dome [parents] ; 2013 Ski Swiss Gstaad [parents] ; 2014 Ski France Courchevel [parents] ; 2015 Ski Romania [parents].

Besides that after the army I didn't get the traditional Israeli backpack trip, but I did get usually 1.5 month as a backpacker each time on the vacations from the university etc:

2002 Thailand [me and ex-girlfriend] ; 2003 India [me] ; 2004 Peru & Bolivia [me] ; 2010 China [me] ; 2010 Egypt [me] ; 2015 China Winter (supplement: Harbin Yuan Yang) [me] .

The length of all these trips should be "multiplied" by the our family's "state of mind" that was originally dictated by my father, and by now it's part of us: We never know if this maybe the last trip, so every time we travel to another region that we want to see the most. Without taking into account deals, discounts, prices, ease of execution, familiar surroundings etc - just pick the gems on a global scale! Every day you try to squeeze in as many beautiful views as you can. Restless exploration like there is no tomorrow because maybe there will not be. So each day is intense, pricy and hard, and equals to a few days of the average traveler.

What do you gain from the trips? Beyond the obvious wonderful experiences that can't be taken from you ever, you learn a lot from each trip if you want to. For example: When I was 10 years old we travelled to an organized tour of safari in Kenya. Most people rely on the guide but my father prepared like we were going (the normal case for our family) on our own. He knew the places with as much accuracy as the guide. The reading and preparation in advance teaches you a lot. Also everything related to that country or area that you read or watch in the future "talks" to you more and means something instead of being a disconnected piece of trivia.

Before the trip he bought for us in a used books store the entire (20 volumes) encyclopedia of wild animals in Hebrew (it was translated from the Spanish "Enciclopedia Salvat de la Fauna"). Out of those we all read the whole 5 volumes that deal with Africa. So by the time we got there we knew all about the different animals and eco-systems, and actually saw and understood more from each encounter with the animals. Of course being a much stronger experience, much of the knowledge and understanding sticks with me to this day. Of course this is an example but you can apply it in different places in your life.

Nurturing brings talent

When I was a child I had a book by Lee J. Ames: Draw 50 Famous Cartoons. It opened with the sentence "David can draw Popeye better than any of the other kids!". It said that such encouragement and peer acclaim generate incentive. But it also works the other way around! If you give the child encouragement for trying and for improving each time, even if

the initial achievement is very poor, then gradually the child will put more time and effort and thinking into the drawings and the child will create pretty drawings! Of course this applies in any field, for example reading.

The debate of nature vs. nurture basically talks about what has more influence: the genes you were born with or the education you get. In early days people thought that children are born like a "tabula rasa" (blank slate). But today we know more and more how much genetics effects simple and even complicated behavior patterns. I don't need to tell you that ADD is genetic. But I do want to tell you that you can also influence positively using the right education.

For example my attitude towards science was fixed as very positive since the beginning. This was the way that my father introduced me to the subject in our talks. When I was a little child, I would come to my parents bedroom in the evening when my dad was reading in bed, and lie down on the other side (my mom's side) and ask my dad questions about science. Of course it was not defined like that, but I would ask about the end of the universe and stuff like that. And my father knew a lot, and if we came to a subject he didn't know he would tell me he didn't know but we speculate together. These are some of my earliest and most cherished memories. If these are your early encounters with these subjects, than you develop a lifelong love for science and mathematics, that can't be shaken by failure at school or other difficulties.

Tales improving language

My father loves nonfiction books and as a result the whole apartment was always filled to the brim with books. My favorite books when I was a child were folktales with a moral. I had a lot of those: from the Jewish tradition, Arab tradition, eastern religions, world mythologies, etc. As a byproduct I'm also a huge fan of proverbs, if I find a book with proverbs it can waste a few hours for me, because I just get hooked and read and read. Many of them I still remember by heart to this day.

Another aspect of me being a bookworm was that when I was a child we had a subscription to the library and we would travel to a suburb of Haifa (Kiryat Bialik) each week and get a few books. I think I read most of the kids section, which was pretty big. Another semi-literate thing that we did was going to sing-along (with random people from the community that we meet there) in Tiv'on. So we had books and booklets with lyrics of songs, which I was also very fond of.

When I was in the beginning of primary school my mom and dad wanted me to have good English vocabulary and also accent. so they got me these wonderful rhymed fairytales sets of books plus an audio cassette by a company named Kidfest International. For example Little Red Riding Hood, Snow White, Puss in Boots, Ali Baba and the forty thieves, and so on.

My father photocopied the book on bigger pages so that there will be large space between the lines, and my mom would sit with me each time for about an hour or two with a tape recorder and we would play along two lines, to hear how the professional narrator would pronounce the words with proper accent. Then I would repeat that aloud to the best of my ability while reading it in from the written text. If we encountered an important word that I

did not know (which was a lot) we would write with a pen its Hebrew translation above the English printed word.

Years later, just before I went to the army, I took a course like everybody else to prepare me for the "Psychometri" test (which is like the SAT / ACT in the United States). So it's divided into 3 parts: Mathematical, English, and Hebrew (the Hebrew also contains logic). It was only when I got to the course that I was surprised to see how other people struggled with the language, like they had lists of words and proverbs to learn by heart, which for them was like ancient Greek, although it's their mother tongue! For me the vast majority of these were part of me already, because I grew up reading all those books.

If someone is curious I got 727 (the grade spectrum is between 200 and 800). The grades of the individual parts were: 146 out of 150 in Hebrew, 147 out of 150 in English, and 132 out of 150 in mathematics. Half of the course I was not even in Israel, I was travelling with my parents in Switzerland doing hikes, so maybe I could have done a little better.

By the way the rich language did not go in vain completely after the "Psychometri" test. When I did my law L.L.B. degree, we had to do an internship for one year in order to become a lawyer. My cousin's (then) husband was a lawyer in property (real-estate), and told me "not to worry", so I didn't. Then he ditched me in the last minute, and I was left without a place to do my internship. So I looked feverously but all the places were already taken, usually a whole year ahead.

One day I saw on the law faculty billboard a note that said that a peace judge in Jerusalem was looking for an intern. So I called the phone number and was summoned for an interview at the same day. Despite my parents protest, that Jerusalem is far and risky, I decided to try my luck. So I went to the transportation court where the judge Abraham Tennenbaum worked. He had one degree in law and another degree in computers, so he got all the peace level cases from all the Jerusalem district.

At the end of the interview he asked me one last question which I think was what made him accept me for the position. It didn't have anything to do with law. He asked me who was Charles Babbage. I replied that it sounded really familiar but I apologized that I don't remember. So he pushed on, if I had to guess, what would it be. So I answered a mathematician. And the next day they called me that I got the job.

So back to the story, I worked there for a whole year and the judge was very nice and this job was the only nice time that I had in that dreadful profession - law. As an internee of a judge, you essentially write the drafts of verdicts. If you did a good job, what you wrote becomes more or less the final verdict. Of course the judge tells you what the final outcome should be before you begin to write. So my rich language came really handy in these verdicts because it's not the norm to talk like that on everyday life, but in court verdicts it's common and desired to use high language, so I did.

Hobbies for a sense of achievement

When I was at primary school I was the top of my class, despite the fact that I didn't do any homework or learning before exams at home. This was because I could still use my

intelligence and general knowledge to understand what's going on in the classroom and to answer the questions in the exams. However when I was 13 and started junior high (middle school) this was no longer enough and I failed more and more at school.

So my parents were really worried and there was a lot of tension at home, especially with my mom. Nobody knew about ADD back then. My father did sense that I'm not lazy because for example if I was told to take out the garbage, or something simple like that, I would do it without delay. But it was clear that it's not normal that homework that takes other people one hour takes me four hours or more. So luckily for me he understood that I had some problem, even though he had no idea what it was, and decided not to push me, because he saw that I really can't. He also got my mom to stop bugging me ceaselessly and to try to support me instead.

However at some point my dad considered taking me off the 3 times a week course that I was attending where I practiced kung fu (Chinese martial art). But before he did that he asked the advice of a fellow worker in his department named Irena which was very smart. So she advised against it, saying that it's important the child will have some field that he is relatively good at, because there he can get confidence to build his self esteem, especially if he can't do it at school because he's weak at school. So my father enabled me to keep practicing in kung fu, despite the time that it consumed.

Youth - Learning and Training

Nerd's Guide

We all know that nerds excel in school and later at university and work. Why is that? Most people think that's because nerds are smart. Surprisingly, this is not the main reason. The nerds' way of learning is their true secret. Here are the simple principles that lead to the nerds' success, and now you can put them to good use in your own life.

Food for thought

As you can already tell from the preface, the book is presented in the following format: I tell you a true story (taken from my own experience) about the good way to do something, and then we analyze it to see how to implement that idea in helping ADD/ADHD.

We all know about the importance of a nutritious breakfast. Without breakfast we are distracted, tired and grumpy. But many of us don't know that your choice of what to eat, also makes a huge difference.

When I was in primary school and high school, there was no awareness of which food is good for concentration, so my parents bought me the things that I liked the most: Chocolate and milk and above all chocolate milk. This included a pudding called "Milky", white bread with chocolate spread or butter on top, and to drink I had chocolate milk preferably from the kibbutz "Yotvata". Next to this I would eat chocolate cake or sweetened puffy rice based cereals named "Tzipi". All this sounds very tasty (and it still is), so what's the problem?

The problem is that it's made of simple carbohydrates which is a fancy name for sugars. Why is that bad? Because simple carbohydrates enter the blood within a few minutes from the moment that you ate them, and raise the sugar level in the blood dramatically. This means you get a short boost for a few minutes and after that you're left more tired and less concentrated than before. This is true even if you don't have any ADD or ADHD.

Simple carbohydrates (sugars) can also come in disguise - without being sweet. This is the case with white bread, pastries, potatoes, rice, corn etc. All these are very energetic because they contain starch (amylum). But the starch quickly splits into simpler sugars within the body, so it's just like eating plain sugar.

Another thing that is very bad for kids' (and adults') is milk. Cow milk contains proteins that can cause allergies. Infants have enzymes that can digest the milk efficiently. When we grow up we lose this ability. That's why milk is bad. Plus of course it has animal fat. Fatty food like milk also clouds the mind and interrupts with our concentration. So up until now I told you what you shouldn't do. Now let's check a healthy alternative that's good for the brain.

These days I start my mornings with a cup of green tea (which has anti-oxidants, and is healthier than coffee), with as little sugar as possible. Admittedly, I have a sweet-tooth so I put one teaspoon of sugar, but if you can go without the sugar, by all means do.

As for food, I put in a bowl pro-biotic yogurt which is a lot healthier than milk, and is less demanding on the stomach. I add cereals from the healthiest kind that I'm can find, most often bran flakes or at least something made of whole grain wheat or rice without sugar. If you don't like yogurt, you can use soy milk which is also healthier than milk.

If I eat bread I make sure that it's made of whole grain as well, because it's more nutritious. The important vitamins are in the seed, which is thrown away in white bread preparation. Also important is that whole grain bread dissolves less quickly into the blood, so you don't get such a sugar high and low, as you do with simple carbs.

To make the morning cereals more tasty and at the same time more nutritious and good for the concentration I add variable fruits and nuts. I usually cut (after I wash it but don't peel it) an apple or a pear or a banana (of course a banana you do peel), add to this raisins or cranberries or both, add pecan or walnut and usually almonds, and then mix the whole thing up. The result, after you get used to it, is not less tasty than the simple sugars alternative. And of course it's a lot better for your brain, and works wonders for your concentration.

Another thing that I consume daily and I highly recommend are food supplements, like vitamins and minerals in the form of pills. Imagine your body as a factory. It needs materials to build things (like your brain tissues). If the production floor workers can't find the ideal materials they still build, but they improvise with whatever materials that they can find.

Personally my daily dose includes Omega 3 pill (fish oil that's good for the brain), Multi-Vitamin pills by Solgar called Omnium, Vitamin C (in this I'm like Pauling, I believe it's good against common cold and everything else), and sometimes also calcium and vitamin D to strengthen the bones. For example ever since I started taking these pills my baldness stopped. Of course the hair that I already lost did not grow back, but there was no further hair loss.

If you want to really dig into the recommended food that will help you beat the ADD or ADHD, I would heartily recommend the book by Dr. Amen: Healing ADD. He makes a distinction between 7 different types of the disorder, and being a psychiatrist assigns each type with the specific diet that is the best for that specific sub-type. His research relies on PET scans which actually show the blood flow in the brain and in my opinion he's the number one authority in the world on ADD and ADHD.

Of course my line of expertise is different from Dr. Amen, because I try to teach you how to cope with the disorder without healing it. This is important if you don't like taking drugs or if you happen to be one of the people like me whose body doesn't respond to the drugs (so the drugs have no effect).

One step ahead

One day I was travelling on the train from Tel Aviv to my city Haifa. There was a 14 year old girl named Nitzan sitting next to me and we started talking. It turned out that she was studying in a special class for gifted kids in Haifa, for example they take lessons in the Technion (which is like Israel's tiny version of the U.S.'s MIT) without the need of entry

exams like SAT / ACT (in Israel we have the "psychometric" test), because they would all probably pass it on maximum score anyway.

When I was a child we had screening tests in my primary school (around the age of 10), and me and another girl from my class went to this test to see if we're gifted. We both failed, and I remember being horrified by the questions like "A chicken and a half, lays an egg and a half, in a day and a half. How many eggs will so and so chicken lay in so and so days?". So since Nitzan obviously passed these questions successfully when she was younger I asked her how did she know how to solve those tough questions (Besides being ultra smart - which I can tell you she was!) at such a young age.

To my surprise she told me that she already tackled this question and many other questions of the same nature, years before she got to the gifted children test. It turns out that her grandmother got her these booklets every time she had vacation, with all sorts of logic conundrums and recreational math. When she got to that test after a few years, it was not the first time she came across the question, plus her skills were already honed by years of practicing her math and logic.

So to generalize it, nerds don't learn in the classroom like the rest of us. They learn in after-school activities, or on their own from books or the internet, or from an enthusiastic family member, and so on. So when the material is presented in the classroom for the first time, they already have a huge advantage - for them it's just another refresher.

More visual

They say "don't judge a book by its cover", but let's be frank, most of us would never read a book that bares the title "Visual Complex Analysis". And yet, this wonderful book by Tristan Needham, has the best explanation to the importance of visualization (in science education, and in particular mathematics).

So I'm taking the liberty of bringing to you the essence of its introduction because in my opinion it's a must. I do implore you to get your hands on this wonderful book and read (at least) the introduction, because the original is also phrased in much sharper and beautiful manner than I'm capable of.

The book opens with a parable. Let's imagine a far away land that has a strange law: They encourage the people to write music notes on paper, but it is absolutely forbidden to ever play or sing them. In this strange land, pupils at school learn to read music sheets from paper (without ever experiencing their true meaning), professors debate over who is better Bach or Beethoven, and so on, but all these discussions are done using only the written symbols.

So what does this analogy refer to? We are all made to learn mathematics in school. Mathematics comes from the real world, its roots are in real scientific (usually physical) phenomena. Yet we rarely (except in geometry) teach the students what is the real graphical visual meaning of the equations. We never show and so they can never truly see the deep beauty. For example Gauss who created the complex plane, Newton who based his Principia

on both calculus and geometry, Mandelbrot who couldn't compute unless it was visual, and many more.

As Tristan Needham's book says, throughout the ages, the greatest mathematicians never took notice of this strange fashion (of discarding the geometrical interpretation) and they gained a lot of insights using their visual intuition. In our age, visualization is making a comeback thanks to computers and their ability to draw instantly with arbitrary precision, the graphs that would be painstakingly long for humans to trace.

In later chapters I will point out how this was accomplished (using Wolfram Mathematica software) in The Strulovitz System's website.

Black box

Note: I have to ask for the reader's forgiveness, because this sub-chapter is too long - I got a little nostalgic :-)

When I was in the ninth sixth grade, we had a chance of learning programming in high school. I liked playing games on computers, so I wanted to study programming. But when I tried to learn in school I failed miserably! In face the teacher gave me out of pity a passing grade but I really deserved to fail.

I didn't understand anything they said in class. It was all so abstract and not connected to real life. For example the teacher explained about an array (a table of numbers). it seemed not useful at all, which made it hard to take it in, and then we had to build a program that was like a phone book (list of names with numbers), which was also not connected to real life at all - why would someone want to do that? (remember that in those days most people didn't even own a cell phone).

So after some time I made up my mind that I'm terrible at programming. I came to the sad conclusion that I will not be able to program a computer ever.

Then one day in my after school kung-fu course, I was talking to a friend named Dan Berachowitz. He told me that he has a group with some friends of his, and that they are making computer games and cool things like 3D-graphics and creating dance music on the computer in their spare time. They needed someone to do the 2D graphics, and he asked me if I know how to draw. I knew a little bit so I became their graphic artist.

So after that we started to meet in each other's houses, and Dan would show me the things they're doing, and I it was like a portal to a whole new world opening before my eyes. He used the same programming language that we used at school to do boring stuff (Turbo Pascal), but he also added assembler (which is like machine language which is faster), and with these tools he created computer games that looked like the professional games that I used to play for hours and hours (quest games by Sierra and LucasArts).

Or another example: they recorded the voice of one of their girlfriends and with a few other sound samples like bass drum and hi-hat and synthesizer samples made it into a song that sounded like a professional dance or house song of the 1990's! For this they used software that was called a tracker (like Impulse Tracker and FastTracker 2) which lets you sequence

sound samples and then play them. I was so impressed that I still remember the lyrics: "Time, I'm worried for you".

Yet another example of the cool things they did with the computer: They made 3D modeling and ray-tracing using the (then new) Autodesk 3D Studio software. remember it was all back in DOS (before windows took over), but that's exactly the point, because back then you were able to produce something yourself that looked on par with what the big companies were doing.

So back to the story. Dan taught me how to use Autodesk Animator and Animator Pro, to create characters (sprites frames) and backdrops (screen sized images) for the game we were working on, which was like an Israeli version of Leisure Suit Larry.

Along with working on the game, Dan was simultaneously teaching me a little bit of programming. It was not in the "right" order, and many things I learned "as is". For example the two short lines "mov ax, \$13" and "int \$10" were the magic spell that moved you into the graphics mode. Just like a magician learns "abracadabra" without understanding every word in the incantation.

This is what is known in software by the term "black box". You know what's getting in, you know what's getting out. You don't need to know how it actually works inside, as long as it does.

One day Dan taught me how to put one colored pixel (point) on the screen. It was one line in Pascal language. I was so excited that after he left I decided to use the little programming that I knew to make a character on the screen. So I put one pixel colored blue and all the eight pixels around it colored white, and that was the eye. so that's 9 lines of code, just to make the eye.

This way I "drew" a small character. When you pressed the right arrow, it will be erased and the whole thing drawn again one more pixel to the right, so it "moved". I also "drew" a grey line below my character (piece of floor), and programmed it so when you moved past the floor you would "fall" ("move" down many pixels). So it was the beginning of a very simple platform game.

When Dan saw this the next time he came over, he was shocked! he looked at the few hundred lines of code, and only managed to mumble "so primitive... so primitive..." over and over again. It shocked him even more when he asked if I did this with "copy-paste" and I didn't even know what "copy-paste" is! But he also appreciated my enthusiasm and effort about what he taught me, so he explained to me that this is much easier done by drawing the character in some external program (like Autodesk Animator that he taught me), and then using a 2 dimensional array to hold the image of the character.

So now the array wasn't just some useless and abstract thing. All of a sudden it became very important, because it helped me to make cool things. It was also very clear what it does, because I did everything manually and suddenly there's an easy automatic way to do the same thing. Afterwards Dan made an "opening" to the game for me, using 3D-Studio to

write the name of the "game" in 3-D and I showed the whole thing to my friends at school and they were really impressed.

The demo scene

I remember one day Dan showed me something that changed my life. It was the first "demo" that I've ever seen. Demos are a new form of art, in the same way that there is painting, sculpting, dancing, etc. Demos are like a clip for a song, but all made with programming and computers. They are non-interactive presentations, that combines effects done in real-time (I'll explain a second), electronic music similar to what you dance to in a nightclub, and usually also some traditional style paintings but drawn using digital tools.

The whole thing was very big in the 1990's. Many young people (especially in Scandinavia) had nothing much to do during the dark winter. Stuck at home they could either drink beer or use their home computer to create "demos". They would form small groups (usually one programmer "coder", one musician, and one graphic artists), and create the most amazing "demos" to demonstrate what they can do using their knowledge and talent, and how they can squeeze every last bit of performance from the machine.

A few times every year all of this groups would meet in huge parties which are very cool events where they have a competition between all the groups. In the parties they meet, they have fun together, and they compete which group can make the best demos. The party compound has hundreds of computers and one huge screen with professional sound system to display the demos in that competition. These parties are organized by big computer industry companies, which use the parties also to recruit and "hunt" the best talents.

So what's special about demos? Why do I say that they are a new form of art? You might think they're just like short movies or video clips with music. But no, they are totally different because of these two words: real-time. This means that every frame you see on the screen is calculated just before that using just that machine - a standard computer like we all have at home. This is in contrast to a 3-D movie for example Avatar or Frozen, where each frame is pre-drawn by many strong machines (specialized work stations working together) over many hours (for each frame that you later see for a split second!).

The way this limitation (that everything needs to be calculated in real-time) is "regulated", is by enforcing a size limit on the file size of the demos. For example in the 64K category the demos are called intros, and they must not be larger than 64 Kilobytes which is very small, this is a little more than the space needed to store only one small picture with the measurements of 320 x 200 ! so is this miracle achieved? Through very smart programming. Absolutely everything is produced by code, for example the sound samples are produced out of the needed sine waves, like what you would do in math in Fourier transform.

In general it takes a lot of knowledge in mathematics and programming to create a demo. That's the beauty of the scene: All the secrets are open, you can do it on your own computer at home, and yet each time they amaze everybody with something that was up until that point was thought impossible.

If you are interested in the demo scene, please visit the website <http://www.pouet.net> and scroll down to the section "all time top", to enjoy a sample of great demos. You can watch video recording of the demos (there are links to Youtube) or you can download the actual executables and let the magic unfold in real time on your own computer.

By the way if you're curious that first demo that Dan showed me was called Vex and it was the first demo that Cubic Team (a German demo group) produced. You can still watch it and also the complete source code, in their website <http://www.cubic.org> . I probably watched it hundreds of times back then, my favorite time is the Lissajous curves at the end.

Denthor and LaMothe

After this Dan introduced me to an amazing series of tutorials that taught you how to make these wonderful effects yourself on your home computer, made by Grant Smith from South Africa A.K.A. Denthor of Asphyxia (in the demo scene people have names/handles because it began as a sub-culture of the hacker/cracker community).

The wonderful thing about Denthor's tutorials, besides his very clear and down to earth explanations, was the personal attitude (for example they contained made up short stories that he wrote), and the spirit that this (and back then it really was, at least for me) the coolest thing to do on the planet. It was part of a larger collection of source code that was called PCGPE or game programming encyclopedia,

By the way years later I also contributed my own small portion to the demos community by translating (porting) Denthor's tutorials to other compilers (program builders), to help other beginners. This actually was my very first website. You can still access some of it in the Internet Archive website:

<https://web.archive.org/web/20090807220552/http://geocities.com/doesitsnowinla/demos.htm>

A little after that I happen to travel with my parents abroad (we travelled every year, as mentioned in the sub-chapter about trips), and found in a bookstore a wonderful book that was just published by André LaMothe: Tricks of the Game-Programming Gurus. This book was amazing. It explained exactly how to make a Wolfenstein 3-D type of game.

To people who've never heard of Wolfenstein 3-D, this was the granddaddy of all the shoot-'em-up first person perspective video games, made by Id Software, the same guys that later brought us the revolutionary computer games Doom and Quake.

If you're curious if I ever written a demo or a game, as a matter of fact I tried to use all that in a project of my own that was original: During my military service, when we got a weekend off we would go to discotheques to dance and try our luck with girls. At these clubs, there was always a big screen with a projector that showed some silly movies unrelated to the music that was playing in the background.

My project was a computer program that will fill that screen with cool 3-D graphics that moved in tune with the rhythm of the music, and would display the club's name and messages like "next week special... DJ so and so...".

It programmed a working model in DJGPP (an open source C language compiler) and it read the input from the microphone port (so it didn't need to be connected to the club's playback system), and it moved cool 3-D graphics on the screen according to the beat (the graphics itself was based on a tutorial of Sandman of Valhalla from the magazine PC Format). Then I saw that something a lot more professional had already been made, and thus abandoned that project.

Spiral shaped learning

When I learned in the Technion (which is like Israel's tiny version of the U.S.'s MIT), I decided that it would be too hard for me to jump right in, although I already had the grades to enter the faculty that I wanted - mechanical engineering (to be honest I preferred electrical engineering, but that required better grades).

So I entered the preparatory school (in Hebrew it's called "mechina") that is meant to teach you everything you should have learned in high school (in math and physics) and then some, in the span of one year. As you can imagine it's pretty intense and considered (by those who took it) the hardest year in the Technion.

The "mechina" was a big shock for me and I really struggled to keep on with the crazy pace. For example I remember one day we were talking outside on lunch break and someone mentioned that he even dreams at night about solving exercises, and we all agreed.

The first solution that I found was renting videos (these were actual VHS tapes that you put in your VCR machine). The tapes' first huge advantage was that they included the best teachers on each subject. One of them was Mario Livio (who later wrote the world famous popular math book "The Golden Ratio" and also other very interesting books) who taught physics.

Another one was the legendary teacher who died that year (2008) Giora Haruvi who taught mathematics. For example I remember him describing the log function as an instrument for "picking" powers. This visual image like an orange tree, where the base number is the tree, and the exponent is the fruit that we're trying to bring down (using the log), and other aids that he gave, stuck with me.

This was the first time that I learned using videos, and fully understood how crucial it is for a person with ADD. I would sit close to the screen, like front row seat in the class, but unlike the class I would rewind again and again each time that I lost concentration, so each one hour lecture will take many hours, but at least I got to hear it fully. Of course I could also pause and look up something in the book, or write down something without missing all the rest of the lecture and so on.

One day I found a book in the books shop in the Technion that was one the highlights in my life. It was called Conceptual Physics by Paul G. Hewitt who later became one of my heroes. This book explains physics in an intuitive way, almost without the use of math at all. The book was such a pleasure to read that I read it cover to cover. Although it was not enough for solving the exercises in the exams, it gave me a terrific grounding and love for physics,

and the basic understanding that is crucial to build the next step in the stairway towards understanding physics.

This is what I mean by spiral that winds up and up. Instead of trying to jump straight to the hard questions, get a good understanding of the basics as a footing for the rest of your climb, and go on from there, with a few steps in the middle. My steps were later a book in Hebrew by the Adi Rosen from the Weizmann Institute of Science in Israel. This excellent book is also available in this link for free, but unfortunately you need to know Hebrew.

<http://www.school.kotar.co.il/KotarApp/Viewer.aspx?nBookID=97406733#1.0.6.default>

By the way (this is related to our general subject of inspiring interest in the students) in the first page of this book he quotes Antoine de Saint-Exupery, the author The Little Prince:

"If you want to build a ship, don't drum up people to collect wood and don't assign them tasks and work, but rather teach them to long for the endless immensity of the sea."

After that the next floor in my spiral was the physics books by Sears and Zemansky and Young. These are less inspirational than the previous two books but they are very common in Israel and provided standard exercises to solve. After that I was able to cope with most of the mechanics questions in the preparatory school.

So the general point is that if you have a steep learning curve, use intermediary steps to help you, instead of tackling the big hurdle up front. Each time you will come back to the subject you will be higher in your understanding until you reach the required level.

Synergy between subjects

When we learn subjects in school, we learn each subject separately. It seems as if the subjects came down from the sky in Mount Sinai divided with sharp and distinct boundaries between Mathematics, Physics, Chemistry, Biology, Astronomy, etc.

In fact when a teacher tries to give an example from another field, or to raise interest by blending in something that is not purely the subject at hand, he or she is doing it at their own peril, and will probably be reproached for wasting time and confusing the students with things that have got "nothing" to do with the subject of the current class.

But in fact it's the other way around. When you study the history of science, you see that all the sciences grew simultaneously and influenced each other. Problems in physics developed mathematics like Newton who invented calculus for describing mechanics and gravity. Sometimes mathematicians went ahead and created structures and then the physicists could use them, like Einstein used the curved geometry of space that was created by Bernhard Riemann and others.

All the founding fathers and mothers of science tried their hands in every major subject: Robert Boyle, Robert Hooke, Christiaan Huygens, Antoine Lavoisier, ... people like these advanced all the branches of science that they touched upon, and one discovery led to the next. They probably wouldn't even define themselves as "chemist" or "physicist" or

"biologist", they would just say they are natural philosophers, or literal translation - seekers of the truth about nature (as a whole).

Another example chaos theory (the butterfly effect etc) was first discovered by Henri Poincaré when he studied a problem in astronomy. Then it was rediscovered by a computer scientist in Japan named Yoshisuke Ueda. Then it was discovered by Edward Lorenz in the field of Meteorology (atmosphere study), then by Benoit Mandelbrot in the economy and also in electronic communications in a wire. Since then we've seen that chaos theory can be applied to the bifurcation of blood vessels and nerve cells designing antennas and lots of other areas. In human kind will figure out turbulence, it will probably also be based on chaos theory.

For the student, learning science in the historical context (where subjects are blended into each other) provides the motivation that the original discoverers had. They ran into some obstacle and they tried to figure it out. If you just land it on the student out of thin air, the student doesn't see what's so great about this solution that you bring to him or her.

There's a tremendous zeal in the human soul for learning these subjects if you only serve it in the right way. See for example the success of popular science best sellers like Fermat's Last Theorem by Simon Singh or A Brief History of Time by Stephen Hawking. Personally this is probably my favorite genre of books, and I read a lot of those.

Especially important for education are the books that successfully mix the popular science (without math) with the real science (with math), because they help the student to overcome the fear of math. The best example I can remember is An Imaginary Tale: The Story of [the Square Root of Minus One] by Paul J. Nahin, and the books that followed. Nahin shows what led to the discovery of complex numbers, and how and why they evolved, and doesn't just present the final results as all the classroom textbooks do.

By the way this is one of the great drawbacks of modern science - the fact that everything is so divided into categories and sub-categories, each one is becoming very specialized in his or her tiny corner but not enough people seeing the big picture. Another pathology of the current academic state is the pressure to "produce" papers all the time, which leads to papers that are published just for the sake of publishing, without discovering anything meaningful. I can elaborate a lot about the subject but I plan to talk about this in my next book, so for the time being, I leave it at that.

Learning supporting hobbies

Everybody knows the stereotype of nerds always includes nerdy pass times like chess, science fiction, knitting, dungeons and dragons, museums, recreational math, and so on. But it may come as a surprise to you that it works both ways - these hobbies gives the nerds their power! The brain is like a muscle in this sense that the more you use it, the "stronger" it gets. The brainy hobbies help the nerds to build (or keep) more neuron connections.

I want to give you the not-so-obvious examples of how nerdy pastimes helped me to develop skills. There are a lot more examples in the chapter about children.

Playing descent: Descent was a revolutionary computer game in 1994. Unlike games like Doom where you could only move on two axis - back and forth, left and right, Descent allowed you to go and turn on the third axis - up and down. Besides the wonderful exploding robots and the adrenaline rush, Descent forced you to memorize (and also understand from the map when you pressed [TAB]) the elaborate 3-D levels which curved and twisted more and more as you moved up the game. This intense 3-D experience was unlike a 3-D movie, because it was totally interactive. Also your life (in the game) depended on it, so you had high motivation to improve your spatial perception in your right brain hemisphere.

By the way the way real nerds are playing is different from "normal" people, depending on the nerd. As an example, a nerd friend who was very competitive in this sense, invited me one day to his home, to show me that he finished (without cheats) all those games like Wolfenstein 3-D, Doom, Descent etc. In Wolfenstein you could see that the game designers didn't even plan on this to ever happen, because the score just overflowed and was more than what the score panel could handle.

Of course his way of playing was unusual, like he would study each level strategically, and save every few seconds, and load pre-saved games to keep always in full ammunition and full health status. I'm not saying that it's fun to play like this, I just want to illustrate nerd thinking. Another form of nerd thinking was my own, I never cared if I lose or win in all these games, I just played to drool over the technical level of the 3-D graphics itself, coming from a 3-D graphics programmer perspective. To this day I have a "fetish" about 3-D animated movies like Pixar for example, and the only people that go to all these movies are parents with kids and me.

Another nerdy thing that the games "push" you to do is to understand more deeply the computer. I remember at high school we would each come with packs of dozen of diskettes with archived pirated software (usually games) and swap and trade between the friends. So this was the way I was first exposed to DOS commands, and batch files, and archiving utilities like Zip and Arj and so on.

The "top" of this trend was that one time I got a demo of a game called Virtual Pool. It was simply amazing, like a completely realistic simulation of a pool or billiard game. I don't know how to play, but I adored the 3-D graphics. The problem was that the demo came with only a few balls and not the complete set of about a dozen balls. So what I did was to "crack" the game, I sat and dug into a saved game file with a hex editor (like a text editor but for the physical bytes of the file), and figured out how all the balls were "saved" in the file. By editing the values according to the pattern that I discovered - I got all the balls like in the full version. After this I got scared of going on in that path, and I imagined how I'd be a hacker and get to jail instead of a normal life, and I did not turn in that direction.

By the way I once tried to develop my right hemisphere by training to write using my left hand. I'm right handed, and usually write with my right hand, but I read that left handed people are often good in math, so I tried developing my math skills in this way. After training for a few days during school, I did manage to write reasonably with my left hand. This is something I didn't read anywhere but it makes sense to me that it contributes to your right

brain hemisphere and hence to your spatial perception skills, which in turn helps to understand and solve science problems.

Another example similar to the latter one, where I actually tried to actively improve my brain was according to the Alexander Mikulin who was a Russian chief engineer (he developed the engines for the Soviet airplanes), that put his engineering capability to understand the human body and improve our way of living, and the principals he found were called collectively "The Mikulin System".

So for example in his very interesting book - please note: you should read his book with caution because some things there might be dangerous - It was explained that when he's not so concentrated, he goes and leans on the wall while standing with knees slightly bent, and go on top of his fingers, and drop down on his heels, and repeat that a few times.

This helps the circulation of the blood (that eventually brings fresh oxygen and fuel to the brain and take away CO₂ and waste products - thus improving your concentration), because coming up from the legs (while the person is not lying down) is hard for the blood, and this impulse that the floor gives to the heels (when you land suddenly from a few centimeters high) makes the blood go up, like when you open a soda bottle by hitting its bottom suddenly with the palm of your hand.

Thinking through examples

We already talked about the importance of concrete versus abstract, and about the importance of examples as close as possible to real life and to useful situations that the student gets to experience firsthand. Also this is a super important and central notion in The Strulovitz System that gets applied all the time, I think it's easy to understand (though very hard to implement as a teacher). So here I would to explain another idea that's got to do with familiar examples

In 1998 the most famous Israeli hacker Ehud Tenenbaum (also known as The Analyzer) got caught. He cracked into the computers of the biggest organizations like the Pentagon, NASA, and the U.S. navy and air force, as well as many universities like MIT, and also to many classified computers in Israel. Many people heard about him, but not many people remember that he's dyslexic.

Many people are dyslexic, it's the most common learning disability, but - how can you be a master hacker while suffering from dyslexia? A hacker needs to read and write programming code all the time, and also educate him/herself through books (about Unix etc). The answer was given in an article where The Analyzer explained that he remembers words as a whole (like taking a picture in his mind of the whole word) without dissecting the words into syllables and vowels and rebuilding them like common people.

By the way I think a similar ability is developed to a certain extent in all of us, like you sometimes see this chain mail where only the first and last character in each word stay fixed in the correct place and all the characters within get scrambled, and you can still read. And

also the eastern language like Chinese, where the character has totally different meaning depends on which character it follows, they also train their brain to think in templates.

From my experience, this way of thinking in "blocks" of defined functionality, is prevalent in software in general. For example we had an officer (software engineer) in the army in our team named Mark, who used this often, and I remember joking about it with a friend that Mark wrote one line of programming code once in the beginning of his career and he's copying and pasting ever since. Of course that's only a joke, but it goes to show you that this way of thinking is useful.

So this ability can also be developed in people with ADD. For example I never learned the English language properly, but always had good grades, and this is due in large part to memorizing American movies, like Quentin Tarantino movies that are catchy and fun to watch (In the chapter about learning English for children I list a bunch of more educational movies).

This way, when I was taking an exam (or was using English anywhere) and I needed a certain structure for the sentence, I would just browse my mental dictionary made of movie quotes that I knew by heart for the most matching or similar sentence. This may sound like a silly method but it resulted in very good grades all through high school and also in the entry exams to higher education.

Another example from a different area is what I've seen once on television about a woman who is a chess grandmaster. There are only a few people in the world in such a high rank. When she was a child, she and her father systematically went over binders filled with pictures of significant chessboard arrangements, like key positions and learning to recognize them and of course what's the best response in each situation.

So the TV program explained that recognized chessboard settings in the same brain area as facial recognition (they tested which areas of her brain were active with electrodes while she was thinking of chess problems). So for her recognizing a certain chess position (and knowing immediately if it's good or bad and what to do about it), was like us recognizing a friend or a foe on the street. Most of the time she didn't even need to analyze the situation from scratch, she just had this huge vocabulary of readymade automatic intuition.

Of course this is applicable in many other areas outside of chess. For example when I studied for the bar exams to become a lawyer, there was lots of material, four thick books (like four city phone books in Israel) that you need to learn by heart. All of it about procedure, which means things that have very little reason: The time for this process is 14 days. The time for that is 21 days. This thing is allowed only for a judge. That thing is allowed also to a "rasham" (a special lower type of judge), and so on.

So like in chess, there are too many options in the "tree" of branching possibilities to cover them all. You have to train your brain like a neural network to "feel" that when you see for example such and such procedure name, it looks more "serious" to you, and you kind of guess that it's the correct answer. Because if you try to really learn by heart everything so that you can analyze the questions in the exam accurately, it's way too much to take in and

memorize. You have to make a conscious decision to let go of the precision, and to embrace "fuzzy logic".

Another thing that made all the difference was that I had a "babysitter" for the whole period of my learning for the bar exams. My mother retired from her work place (she was an accountant in Zim) a few years before the pension age. She did that to be with my father who also retired early from his workplace (he was a department manager in Israel Electric Corporation).

So anyway luck had it that she could dedicate those two months of me studying from morning to night, so being with me. I would read aloud, which helped me a little in keeping my line of thought on the super boring material and not to drift into daydreaming. At the same time she would read a book of her own, or watch TV with subtitles, or play bridge in the computer, or work in the kitchen, all of those of course in silence, not to disturb me.

Each day was "budgeted" so that I had to read from this page number to that page number, no matter what happened. And also I rationed the pages into hours so in each hour I had a fixed plan of exactly the amount of pages that I should read. At night when I finished she was beside me when I was practicing in the course company website the exercises in the computer. Without her help there's no chance that I would pass the exam and become a lawyer, let alone that I would get 80 (out of 100) which is considered a pretty good grade like I did.

I want to point out another thing that helped me very much and might help you too. We studied a lot of times on the roof. Our house back then (which is my house now because my parents moved to a new apartment and they gave the old one to me) has an opening to the roof floor of the building. My mom put many plants and flowers, a swing and two lounge chairs made of plastic, and it's really nice to sit there and watch the view. But studying there (for example reading) is a lot more effective than inside the house.

I relate it to the constant wind that changes the air that you breath. That's why except in the summer it's always cool there and you need to put warm clothes on before you go up to the roof. Normally the air we breathe out (that has little oxygen left) doesn't get far from us and we partially breath it back in the next breath. On the other hand, in a place like this roof, the wind quickly takes away the used air and brings fresh air rich in oxygen for you to breath. I think this is the reason that you stay alert and focused sitting on this roof. Of course you can get the same effect in any open place, or just open the windows (but put something on, so that you won't catch a cold).

But the reason can also be the ambient indiscernible distant noise from the streets around that sometimes for people with ADD makes it easier to concentrate. Although a normal person without the disorder would probably prefer complete quite closed room.

Ignoring teacher's personality

For many pupils at school, and even students in the university, the teacher's personality makes a lot of difference. For example they can love a certain subject, because the teacher

brings it to life, or they can hate it because the teacher is boring. That of course has nothing to do to the subject itself, which can be fascinating.

Nerds are less prone to this because they find the best teachers for themselves and learn the subject beforehand outside of the school curriculum. Like for example looking at MIT's lecture in the website Open Course Ware, or other such universities' free and initiatives. Or borrowing a book from the library about the subject that interests them.

Choosing the right teacher (choosing which book) for you, is so important that I cannot stress this point enough. This became one of the key factors in the website that I built, as you will see further in this book. I would like now to explain my strongest proof of this conclusion, which is the story of how I came to pass the calculus exam in the Technion.

I would like to start by describing to you how much math is hard for me. When I sit in a restaurant with friends for example, I'm always embarrassed because it's virtually impossible for me to calculate how much money I need to give. If I need to get change than it becomes really impossible for me, and I just have to believe what my friends (or the waitress) came up with, and pay the amount that they say.

But I want to emphasize also that unlike most people who are weak at math, I love mathematics. I find it fascinating ever since I was a child. I remember precisely how this love story began, because it's an anecdote from my childhood that my mom liked and she brings it up sometimes. We always had a lot of non-fiction books around our house, because my dad always reads a lot of those (this is my taste too, except I have ADD so I read much less).

One day when I was about eight years old or so, I picked up two books in the evening, to have something to read in bed. They were both from the wonderful series by Time Life "Life Science Library", which was translated into Hebrew. One of them was "Mathematics" and the other was "The Mind".

As you can guess I chose mathematics. This amazing book just opened my mind to such a treasure trove of beauty and magic that mathematics is. I recommend it heartily (get it even if it's second hand) to anybody who is interested in mathematics. If you are anxious about math, this would cure your anxiety I promise.

By the way I never got to read the volume about "The Mind" which is a pity because it was later thrown away. My father bought many new books each month so we would have no room and were forced to put them outside, near the garbage, in hope that someone will pick them up and enjoy them like we did (the library wouldn't except most of them unfortunately).

OK so back to the story about the calculus course in the Technion. When I finished my military service as a programmer in the electronic warfare brigade, I worked for almost a year in Elbit Systems which is major defense contractor here in Israel. Then I decided that I want to learn the profession properly in the university. At the time I didn't know I had ADD, and I didn't even know that there is such a thing as ADD, schools didn't diagnose things like that in the 1990's).

Elbit wanted me to sign up on a student job, to work in their company for a few hours each week, study and finish my degree in computer science and then to be obliged to work there for two years in return. I considered it but decided against it, because I was young and stupid. My arguments at the time were that I wanted to get better grades (if I study full time then I have more time to study), and then I'll be able to choose where I want to work, like IBM or Rafael Advanced Defense Systems or wherever.

So I quit my job and started studying computer science in Haifa University. The subjects were almost entirely higher mathematics: linear algebra, discrete mathematics, calculus, introduction to hardware (which was also math, like Boolean algebra), and C language. I failed miserably in all of the above, except in C language where I had 90 out of 100 and I helped others who were failing. I tried going to the teaching assistants, I tried private tutors, I tried even coming to the dean and asking if they had a way to help, but he said that if it's such a colossal failure maybe I should pick a different path.

So I left Haifa University and thought maybe it wasn't me, it was the system (remember I didn't know that I had ADD at the time). So I tried the Open University which is a distance education institute. You learn at home and come a few times each month for one year to get a little direction, but basically you're on your own with the books. On the other hands the books are very thorough and teach you everything.

I took linear algebra and calculus and statistics (which was like half a course). I read all the books and basically understood what was written, but again couldn't see the connection between that and the questions on the homework and on the test, and couldn't solve a single question. I passed barely on statistics (which was much more basic to start with), and utterly failed in both calculus and linear algebra courses.

Now I'm fast forwarding over a lot of shitty jobs and attempts to retrain in different professions, because this isn't a biography.

So we reach now the point that I started studying mechanical engineering in the Technion. The courses I had on the first semester were: linear algebra, calculus, general chemistry + lab, introduction to material engineering, and C language (introduction to computer science). The C language was easy, and the material engineering was less serious and done in pairs. So as far as I was concerned I had only 3 courses.

Since the lab instructor Tamar was very kind and tutored us before each lab, and during the summer I gained fairly decent bearings in high school general chemistry (I've never learned it before) from a good book, it really came down to only linear algebra and calculus.

Try as I might I couldn't understand anything neither in the lectures with the professors nor in the recitations with the T.A.'s (teaching assistants). I quit attending the lectures and recitations, and would stay at home watching through the internet (back then a special code was required, today it's free on Youtube) the recorded lectures of the Technion's best lecturers.

I was able to follow them, but I could not understand the material enough so that I will be able to solve on my own even a single exercise. The homework I had to hand each week I

would copy in the last minute (usually driving frantically to drop my paper in the box just before 10 PM) from the "reference" - an unofficial underground file with all the answers to all the exercises, that a friend gave me.

But the recorded lectures did provide an unexpected solution. In the Technion there are 3 levels of Calculus, the easy one (for industrial management etc), the middle one (for mechanical engineering etc), and the hard one (for electrical engineering etc). I needed the middle calculus, but I was watching the online lectures and recitations for the hard calculus too. So one day I was watching a recorded recitation by Aviv Censor in the hard calculus. and he mentioned in a casual way (not in the beginning of the course) the course's textbook by Michael Spivak. I looked it up in Amazon where they have reviews. I remember one review especially (out of a big cult of devoted followers) wrote: it is not "plug and chug" - it is "blink and think". This really impressed me! I was desperate so I went to the Technion's library to look it up.

Now to appreciate the mental courage it required, you should understand that for all the students bar none, this definition of "the text book for the hard course" was just a formality. Written in English, at a weight of almost 2 Kilograms and length of almost 700 pages book, this hardcore book from the 1960's was not used by anybody, including capable students without ADD. For example, it did not begin with calculus but with a rigorous presentation of the real numbers. There were very few copies in the library, which means that the Technion staff felt the same. This was never really meant for the Israeli student, more for the prestige of the institution.

So anyway I borrowed the book and made a bold decision. I will sacrifice linear algebra, and concentrate only on calculus. You can take each exam twice (in case you are sick, or you couldn't study etc). The first time I took calculus I got 25 out of 100. Then I decided to gamble everything on this book, and each day I got up in the morning, read as many pages as I could (normally about 10-15 pages), and in the evening went to sleep. I had one month until the second chance, so when the second exam came, I already went over most of the book.

Since I am very slow I decided to skip all the exercises, and only read the theory and the solved examples in the book. If I would solve exercises it will take a lot of time and especially energy, and I did not have any of these two to spare. So I did not solve even a single exercise. I was just reading the wonderful explanations and following the step by step clear examples. I did it slowly and with difficulty, reading over and over each line. After a month of this it was time for the second (and last) chance for the calculus exam.

The exam is divided into two halves: one half is multiple choice questions, and all of them has more than one tricky distracting factor. Since I'm naturally confused I stumble and fall on each of these obstacles. Since in the multiple choice questions they only care if you got it right or wrong, I failed in all of these questions. But the second half of the exam was open questions where you have to write a proof or some other free text. In these question I got all the possible points, because they saw that I understood the deep principles very well, and forgave me for not writing it exactly in the correct way.

This with the few points of the "homework" (copied from the "reference") gave me a barely passing grade which was 57! This is probably the one achievement that I am most proud of in my whole life! Most people (without ADD) fail in the first year when they take calculus in the Technion. This is comparable to a handicapped person running the marathon race. I am much more proud of myself on this one, than the 80 out of 100 that I got in chemistry with laboratory, or the 96 out of 100 that I got in C language there.

This single experience was also the base of much of The Strulovitz System, especially the 3 "axioms" that I will explain in the part that deals with the actual websites that I've built.

Inspiration for action

As I already mentioned in the sub-chapter about synergy between subjects, nerds don't only enjoy the science itself but also tangent topics like popular science, the history of science, biographies of scientists, and science fiction and fantasy.

When a regular student is presented with the scientific knowledge in the classroom it's all neat and tidy, without ever a doubt or wrong turns. The teacher recite the rules in order and it sounds like an impermeable wall of superhuman logic. Sometimes the teacher doesn't even give credit to the people who discovered the rules at all because it boosts his or her ego. All this leads the student to be intimidated by the seamless perfection of this huge body of knowledge, never realizing that the people who first discovered it were at the time just as confused about it as the student and often took a wrong turn, and that it's ok to be wrong.

Nerds absorb all the background knowledge from books and magazines, television shows and movies, websites and applications, and they know that real science is all made of patchworks and trial and error. Real science in real life is filled with wrong guesses and predictions by famous scientists, alternative theories that were left in the dark corners of science history and so on. This gives the nerds the courage to face the learning material, and of course enhances the interest level by adding the human factor, instead of just cold sterile and detached technique.

Another insight to be gained by studying science history and especially biographies, it that the student understand that nothing comes easy - There is no royal road to geometry - like Euclid told the king Ptolemy. This makes the student more prepared to find within him or her the dedication and perseverance for the rigorous preparation it takes to succeed.

Last but not least it shows the student, that the message he or she gets from society - that science is boring - is totally wrong and there is joy and satisfaction in solving challenging math and science problems.

In addition to the actual knowledge itself that can form the basis for the further learning in more structured environment, this kind of media also supplies the nerds with strong positive role models to look up to, people who went against the common thinking and triumphed. Of course this is one of the qualities that good future scientists need.

I would like to give a few examples of sources that do not teach you science directly, but develop one's ability to tackle real science in the future.

Cosmos - both the old version by Carl Sagan and the new version by Neil deGrasse Tyson, brings the meaning of science to the public. That means that they take a stand and show you how one scientist can make a difference and save humanity - like Clair Cameron Patterson who discovered and fought bravely against lead poisoning in gasoline, and he also discovered the true age of the earth. It teaches why there is no God and why we must pursue missions in outer space. And maybe most importantly it explains how fragile is the Earth climate and what we must do to protect it. All this is done in a form that appeals to all ages - from young to old - with the "cosmic calendar" (the lifetime of the universe condensed into one year) and "ship of the imagination" (a fictional vehicle that can go into everywhere, from quarks to black holes). Another series that is similar is "Through the wormhole" with Morgan Freeman. It is less brave though and only implies towards the truth, leaving the final verdict to the viewer.

BBC Documentaries - Much like with their classic British sitcoms, the BBC is a stamp of quality and excellence regarding nature and popular science documentaries. In the biology and evolution department they have anything by David Attenborough, in physics and chemistry they have Jim Al-Khalili, in Mathematics they have Marcus du Sautoy, in anthropology they have Bruce Parry, in Medicine they have Michael Mosley and so on. Similar to BBC in England are the American PBS, Discovery and Nova. A notable American example is Sci Fi Science: Physics of the Impossible by Michio Kaku.

The last genre that I would like to talk about here is the scientific "reality" show, that I hope can attract new audiences to science. A good example would be MIT's ChemLab Boot Camp series that followed MIT freshmen in their course of laboratory techniques from their personal perspective. Another two good examples would be the British "Beautiful Young Minds" and the American "Hard Problems: The Road to the World's Toughest Math Contest" which both cover the 2006 International Mathematical Olympiad (IMO), where the brightest teenagers from each country in the world come to compete in solving math problems.

Adults - Work and Creativity

Note: This chapter is based on my own personal experience with pure ADD. If you have Hyperactivity (ADHD) or other additional problems, this might not apply to you.

After all the learning and preparation through your childhood and teens years, you eventually need to work at something. The classic recommendation for ADD is usually go work in something that is outside, which is dynamic, not confined to an office. Or another classic example is work with something that evolves people, meeting and talking to people.

While I don't dismiss these good advices, they are not suitable for everybody. What if you are not that friendly? What if you have trouble in finding places? (although that one is taken care of these days by navigating apps using GPS) and so on. So I would like to give you a totally different version of what is a good work for a person with ADD which just might suit you - work with computers.

At first this sounds like a dumb idea, a person that can't concentrate for even one minute, and you want him or her to sit for hours and hours in front of the boring monotonous

computer screen? Yes, because it's got a huge advantage that more than makes up for that - the "undo" button. This magical button along with saving past version history and making periodical backups means that no matter how bad you messed up because you were confused and did something wrong, you can always go back to the previous state. All the occupations that deal with real life don't have that. Real world always punish you for that. Computers never do.

The second important point is that computers work at your own time and place, and the jobs are usually a lot more flexible. If you are more productive at night, your employer will usually be able to arrange for you to come in irregular hours, of course if you are a freelancer or self-employed that's even simpler. In the same fashion, If you feel more comfortable doing the task while you're in the middle of the desert or on the train, you can do that, with a laptop and cellular internet link. You decide when and where you want to work depending on when and where you are most efficient. If you want to take breaks you can. If you are more efficient in a continuous marathon, you can do that. If you are more comfortable working in the quiet hours before people come to work, or after people leave work, you can do that too. The employer usually only cares about what you produce in the bottom line.

The third important point is that computers work in your pace. If you talk to someone, they probably don't talk in exactly the rate that you would like the information to flow. It's either too fast for you or too slow and boring and you lose them. But if you watch video training or interactive tutorials, you can skip a boring part, you can go back to a confusing part. You control the pace, so you study new tools and techniques with much better efficiency.

A fourth point is that many things are done automatically. For example if you are a programmer, as you write the code, the program that you use to write it (IDE) helps you. You forgot something? There's instant online help with an example you can copy and paste. You lost your line of thought? The IDE suggests auto-complete (like in Google search), the IDE error and warning messages guide you, and so on.

Personally I have the pure form of ADD without any "additions". But some people have ADD with compulsiveness or violence or being hot tempered etc. The computer will never get insulted or mad at you. This is a huge advantage in my opinion.

Even if you choose not to work in a technical profession that relies sitting all day with the computer, no matter what line of work you do choose, being literate with computers will help you in any profession and make you more efficient - achieve more with less work.

Building the Dream - The Websites

First Generation

The website was under the domain of Strulovitz because I wanted to brand myself as a trademark and also I felt that the system was relying so much on my personal input that this was justified. However the website was divided into sub domains that could have independent existence in the case I wanted to reorganize in the future. So the division was according to age groups: For example the youth age group had www.nerdguide.co.il. In the main website you had links to the 3 age groups: children, youth, adults. Everything both technical and pedagogical was done entirely by myself. The "artistic" aspect like all the Photoshop work was also done by me. The multitude of illustration pictures I got from Shutterstock and iStockPhoto. There were plenty of cute icons that emphasized graphically key concepts, and at some point I even experimented with giving the whole website a doughnut theme, to make it even more likeable. Even the choice of font for the whole website was a hand writing rounded font in Hebrew (but not too cursive like, so it's still clearly readable). The colors throughout were chosen to be soft pastel colors that gave a warm and relaxing atmosphere to the website.

Video homework help

The first this I did was buying a huge 2.40 x 1.20 meters erasable whiteboard. I also bought an Logitech c905 webcam and put it in front of the whiteboard about 3 meters away, so it got the whole board span. I got a copy of Sears and Zemansky's physics book - I started with mechanics. I would stand in front of the camera and solve one exercise after the other in front of the camera.

Each exercise I would draw (with colorful Expo erasable markers) and emphasize in color. For example this force the weight vector would always be a certain color like brown. The Pull of a string would always be some other color like green. And so on. In the equations also, each of these variables kept its own color so the student could follow easily. In order not to create dependency between the exercises, I explained in each exercise the way of solving from scratch, without referring the student like teachers usually do to previous exercises.

Then I would upload the video clips to Youtube and embed the videos into my website which based on Moodle.

The model of this part of the website was a combination between Cramster (homework help) and MIT's OpenCourseWare. It took the step by step solving of exercise after exercise from a textbook from Cramster, and the frontal lecture style from MIT's courses which gave it a more personal and friendly touch. I also think a teacher can convey more, even with his tone on speech or an expression of his face - like what's more critical and what's connected to what - then just a "dry" text.

The closest thing that was available in Israel to a service such as this (solving exercises from the textbook in video) was either "Potrim" which was like a primitive clone of Cramster, or a service which was not open to the public only to certain schools that had this program "Nachshon" where teachers would sit 1 on 1 or 1 on 2 over something like Skype and video conference with the children.

To the best of my knowledge there still isn't a service like this worldwide. There are many video tutorials like Khan's academy, but none of them combine a textbook so that the pupil can use it as homework help, as a substitute for a private tutor with the questions he or she are stuck on. Khan's academy also doesn't have the frontal dimension of the lectures.

To make the whole things nicer and bring some of The Strulovitz System's principles into it, I embedded in the website also interesting information about famous relevant scientists from each relevant field. For example the Algebra part had the life story of Sophie Germain which because of her young age then creates empathy and identification, and help the student relate to the subject. It's even more important to female students because girls unfortunately get the wrong impression from society that math and science should be dominated by man.

"When Sophie Germain was 13, the Bastille fell, and it was too dangerous to be outside. She was bored in the house and she started reading the books in her father's library.

One day she read something that will change her life: The story of how Archimedes died. Archimedes was studying a geometric shape that he draw on the sand, and he was so focused on it, that he failed to answer the question of the soldier, so the soldier killed him. Young Sophie thought to herself that if mathematics was so interesting that Archimedes died for it, this must be the field that she needs to dedicate her life to. The problem was that a young lady at the time was not supposed to study mathematics. Her parents tried to stop her and even denied her of wood so she won't be able to stay up at night and study. Sophie would cover in blankets against the cold, sneak into her bedroom candles for light, and he parents would find her in the morning asleep on her desk, and her slate board filled with calculations. When she grew up she helped with solving the problem of Fermat's Last Theorem, the problem that will keep mathematicians baffled for 300 years. She corresponded with Gauss (perhaps the best mathematician of all times) and when he eventually found out that she is a woman, he said about her:

"How can I describe my astonishment and admiration on seeing my esteemed correspondent M leBlanc metamorphosed into this celebrated person . . . when a woman, because of her sex, our customs and prejudices, encounters infinitely more obstacles than men in familiarising herself with [number theory's] knotty problems, yet overcomes these fetters and penetrates that which is most hidden, she doubtless has the most noble courage, extraordinary talent, and superior genius."

Commentary for textbooks

Another original concept that I developed was based on this reasoning: The bible has many commentators like Rashi. This is because the bible is so important and hard to understand. The classic textbooks are also canonical to the study of science and many students find themselves struggle to understand them. So why not make a commentary for the classical textbooks?

The second layer of my idea was arranging it in the form of a social network - like facebook for book pages. Each page was a friend in the network. A student can write a question on a

certain page profile, and another student can write the answer. This way they can form a discussion and also have all the benefits of a social network such as liking and following etc.

The actual implementation I did was Elgg based and I chose the classic physics book of The Feynman Lectures on Physics. I logged in as fictitious students and asked and answered questions and answers under different names, to get people to understand the concept. A typical question would be something like: In the third paragraph how did he get to the equation...? And someone else would answer etc.

The result was like responsa in Judaism or Frequently Asked Questions (FAQ) on online forums.

This was a totally new idea in 2010! Only a few years after I did it, circa 2014 a professor in one of the universities abroad made a book similar to this (commentary on a textbook) for Feynman Lectures. I've seen it on Amazon and it had very positive readers' feedbacks. and I think it was called Feynman Lectures Explained or Demystified, or something obvious like that. Unfortunately I couldn't find it on Amazon in the time of writing these lines, so I'm afraid it's no longer available for sale.

History of science adventure game

This was the crown jewel of my efforts in the first round of The Strulovitz System. The game was called "The Longest Quest" after the commercial game "The Longest Journey" which I liked very much. In fact the idea to make an adventure "quest" game came from the insane amount of time that I put into playing these games myself during the 1990's. I would just come home from school and plunge into Quest for Glory 4 - Shadows of Darkness for hours and hours, exploring the land of Mordavia with its magical creatures.

To those of you who don't know what an adventure (quest) game is, it's a game where you don't need speed or hand-eye coordination, just talking to characters in the game, collecting objects on the way, and using them to solve puzzles in the game. It makes you think in a creative way. Here is a list of the quest games that I played through and finished, almost all of them from the company LucasArts (I liked games by Sierra very much too - Quest for Glory series, Leisure Suit Larry series, King's Quest series, Space Quest series etc - but I rarely got to finish them)

Loom, Day of the Tentacle, The Secret of Monkey Island, Monkey Island 2: LeChuck's Revenge, Sam & Max Hit the Road, Full Throttle, The Dig, The Curse of Monkey Island, Escape from Monkey Island, Grim Fandango, The Longest Journey, Dreamfall.

So as you can tell these games can be really fun and addictive and I wanted to harness their power to teach young people calculus. So in order to develop the game quickly I used a scripting engine specific for building point and click adventure games called Adventure Game Studio (AGS). I contacted a lady named Barbara the author of the blog Ramblings from an English Garden (<http://ramblingsfromanenglishgarden.blogspot.co.il/>), and she very generously allowed me to use her photographs of Isaac Newton's actual home in Woolsthorpe Manor in my game as backgrounds (the "rooms" where the characters act). Using the real authentic backdrop settings immerses the player more into the game world

and gives credibility and depth to the story, and that's what a quest is all about, it's like a movie or a book with you as the hero or heroine, controlling the path of the story and making it unfold.

I used plasticine (putty-like modelling clay) to create the characters, and photographed them from all directions to make smooth stop motion animation. I photographed them against the backdrop of a white paper and then removed the paper with Photoshop and these were the sprites of the game. Originally the characters were supposed to be Isaac Newton and Robert Boyle, but then I decided to put Gottfried Wilhelm Leibniz instead of Boyle, because this allowed me (in the conversations between the characters - a quest is based on talking to the characters and picking up clues to solve the puzzles) to give the player both Newton's notation (derivative as a dot above the variable) and Leibniz's notation of the dx/dt .

This was the only part in the game where I wasn't totally true to the real history, because Newton and Leibniz never met in reality - each of them developed calculus independently. Still I thought the huge benefit for the player by using both notations, had justified that.

The background music for the game was from Peer Gynt by the Norwegian composer Edvard Grieg. It's one of my favorites and also was used in Quest for Glory 4 in the town inn (that's where I got the idea from).

For example how the story went, the beginning of the game (which later became the trailer movie on Youtube) started with pictures from Leibniz house, and him walking in a whole Europe map to England (the pictures were taken from Google Earth). At the background there was a dramatic version of Grieg's "In the Hall of the Mountain King" which starts very softly. The subtitles said:

"An old prophecy foretold that 1666 will be a cursed year because 666 is the number of the beast (Satan in Christianity). The prophecy did manage to predict the great fire of London and the great bubonic plague in London. But there was one thing that the prophecy did not predict... the young 24 years old Isaac Newton returns home from the university because of the plague. In these very moment Newton is about to discover the most important scientific discovery of all times! Come join Newton as he turns 1666 into what it's called today: Annus mirabilis (year of miracles) !" .

All the time Leibniz was walking through the village and getting closer to the door and then at the cue of the joining of the choir and the loud part of the music, the logo will appear, and the feature list of the game, like natural historical chronological order of the timeline of ideas, connecting each idea to a face of the inventor and so on.

For example how this was done, the first challenge that the player came across was that Newton supposedly collected pictures of the scientists he admired (like young people hang posters of rock idols on their room wall), and supposedly his mom had enough of this and threw all the scientists out in random to the back yard. And the player had to pick up the pictures into his or her inventory and hang ("use") them on the wall with the hand icon (the mouse also had plasticine icons like hand to use, eye to see details, mouth to speak with,

etc), in the right order of the invention or discovery of the ideas. For example one idea was Gilles de Roberval's treatment of tangent lines.

Screenshots from the actual game:



Do it yourself experiments

Another unique part of the website, that was intertwined with the taped lectures and exercises was simple to do experiments that the student can make by him or herself at home, instead of just watching someone in a white coat lab doing this in the video. I believe very much in the hands on experience, both for the elevated interest level it produces, and both for the longer lasting impression the result of the experiment makes on the student when he or she sees things with his or her own eyes.

For example I designed and demonstrated on video an experiment of making a Cartesian diver (also known as Cartesian devil) which is a scientific based toy that teaches the principles of buoyancy, using a 1.5 litter soft drink bottle filled with tap water, a condom filled with air and tied to a small weight. It was of course accompanied by a detailed explanation of the principles and also the famous story of Archimedes about him calling Eureka while he ran naked on the street after he figured out how to tell if the irregularly shaped crown of the king was made out of pure gold, and of course the principle of buoyancy.

Exciting interactive quizzes

Another major difference from most other websites (although the technion's Mathnet did feature those, but then again, it's not open for the public!), was the incorporating of exciting stories into the computerized quizzes. The student answers the same questions and solve the same exercises, but these are motivated by a compelling story instead of just a boring direction.

For example, I prepared a set of questions in teaching vectors, based on a scenario inspired by the thrilling movie Sanctum. To those of you who missed it, it's produced by the legendary James Cameron and it's based on a real and amazing story of divers entrapped due to a flood avalanche inside an underwater cave and having to navigate their way in the flooded cave to another exit, because the entrance is blocked.

In this example, I gave some background on cave diving which is an extreme sport so it's automatically more interesting, and weaved the background story into the scenario, like "you used a guide line but it got cut off by a sharp rock you brushed into, and now you have to navigate your way according to your underwater notebook" (it turns out that there really is such a thing, and divers can write underwater - it's made of slate pages you write on with a special carbon stick pencil!) . Of course the time for the question (30 minutes) was presented as how much oxygen you had left.

Second Generation

When I started my whole project anew I began by buying a graphic tablet by Wacom called Intuos 5 (now Intuos pro) which was the largest they had measuring about 30 x 20 centimeters in effective pen surface. This I used to illustrate and hand write comments and arrows on the fly during the Camtasia recorder PowerPoint presentations.

This time I had a lot more experience so the whole presentation was a lot more slick and polished. The first thing was to get a simpler to understand "gimmick" (advertising ploy) for the public to immediately get what's special about my system. Since almost all of my basic materials were based on learning materials from abroad, I decided this would be the formal leitmotif theme. So it was all integrated around 3 easy to grasp sentences:

The problem:

- ✗ Students with learning disabilities need the best teachers in the world.
- ✗ These teachers do not live in Israel, we only have their BOOKS in ENGLISH.

The solution:

- ✓ The Strulovitz System makes them accessible through VIDEOS in HEBREW.

Of course the whole website was remade from scratch. I bought 3 new sub domains, that had a more direct link what I was offering. These were www.videobooks.co.il , www.tutor.co.il , and www.stv.co.il . Each one had its own Drupal Commerce environment for the Paypal transactions handling (again, everything was free like the lectures, except the exercises which cost a cheap yearly subscription) and "marketing" explanations, and a dedicated Moodle environment for each sub-domain for the courses themselves, quizzes etc. This time every video in the whole website had two versions in the case that one server was down or slow: Youtube and Vimeo (Pro account plan for HD). And by the way as before all the videos were high definition quality: HD 720 or HD 1080.

For each of these 3 separate sub websites I made in 3D Studio Max a short intro sequence featuring rotating text with the that sub-website name and objects bought from TurboSquid. One of these was attached to the beginning of each and every video, according to which sub-website it belonged to, and during its display there was playing in the background a short part of a certain classical piece.

For example STV 3D logo intro had in the background the atmospheric song from Polovtsian Dances from Prince Igor by Alexander Borodin, while a floating camera rotated around a posh living room until it closed in on an old style television which then raised and rotated in the air below a rotating title STV (Strulovitz TV) which deliberately looked like MTV. After each intro a few seconds of a slide would appear that specify the lecture course and topic. This gave the viewer a soft introduction with a familiar relaxing "ritual" to each new lecture.

The concept of the lectures was totally designed from scratch, instead of me talking to a webcam or me just explaining on a whiteboard, now each and every lecture was built around a PowerPoint presentation that I captured on video using Camtasia. It still had me talking on the corner filmed by the webcam, to still obtain the human factor of the explanation and human touch, but each slide was prepared in advance so it included a much more structured and thought-through construct.

Each slide made the most of color and clipart graphics that I got from Microsoft's Office Clipart website. In fact even the logos of the sub-domains themselves were cute clip arts that I downloaded from there. But the clip arts' main goal was not just to be cute, but to be helpful. They were carefully picked and combined into their specific slide, so that they did not repeat, and in fact created an immediate mental snapshot of the central idea of that specific slide. I also mention for them this context of the image in a few quick words on each slide. This makes them think for a few more seconds (sometimes from a different perspective) about the main idea of the slide. Another huge benefit is that unlike other learning materials, in my presentations there is never the uneasy feeling for the student of "where were I?" which for ADD students takes about half the time and effort - just to come back mentally to the place they were before. With a different and relevant little illustration on each slide, they can tell right away - "oh this is familiar I remember what it was" or "mmm this is new I've never come across this one". As you imagine this took a tremendous amount of work on my part, but it also set my presentations on a whole different level than the competitors.

For example if I wanted to say that you can't take a root out of a negative number, I would put a cute clipart of a witch above the negative number (as if evil), and a cute Halloween pumpkin above the side of the slide that had the forbidden root (the root of evil, essentially an evil plant), and this would create an association that I used later on in another lecture, if I wanted to remind briefly that we can't take a root of a negative number, I would copy-paste a small version of these two images (along with explaining both in written text and in talking), and it will immediately remind the viewer of that lesson.

Again a great effort was put in to give concrete examples of every concept that related as much as possible to the student's real everyday life. So often the examples were "local" like the cable car in Haifa (when explaining how to compute the sides of a triangle), or local candy bars when explaining how to deal with variables (taking care that if the variable were a and b, then the candy bar names started with a and b). In short all the theoretical principles that I told you about in the beginning of the book were implemented.

STV

This was the part of the website intended for children in primary school. The basic idea was: Children love watching television. So let's use this fact and base the lessons on the best educational TV shows in the world!

So for example I used MacGyver the non violent special agent who improvises everything from simple everyday objects using his vast scientific know how, to introduce children to physics and chemistry and to some extent even engineering. So I would assume the child has

just finished watching the relevant chapter, and I would explain what we saw and how and why exactly MacGyver did what he did.

For example how did he manage to contradict Sulfuric acid using Sodium hydroxide (lye, caustic soda), what are they used for (what are they?) and the chemical reaction of the neutralization, all done in intuitive colors for clarity (like the blue and the red together become purple etc).

Or another example was using the short detective stories of Sherlock Holmes by Arthur Conan Doyle to teach English vocabulary. I find this format of short and suspense creating stories very suitable for the task at hand, because the student doesn't need to work very hard - each story is only a few pages long; The student wants to understand every word so that he or she can follow the clues and be like the detective ; The student gets a wonderful reward at the end of each story in the form of the solution to the mystery.

The visual format was following a constant form: I would divide each slide into four quarters, two of them would present screen captures from the television program, showing the instance we are talking about in that frame, and the two remaining quarters would contain explanations or text. So each slide was eye catching and instantly associated with the specific scene from the TV program.

Videobooks

The concept of videobooks was taking the source material which was usually a book or a traditional video lecture, for example by The Teaching Company (now The Great Courses), and giving the student the means to understand that original material, in a sense giving them an intermediary step to make it easier to understand the book or video.

As above mentioned, a lot of thought and work was put into each slide. For example when introducing the algebraic formulas like $(a+b)^2 = a^2 + 2ab + b^2$ I would show graphically why this is true, cutting the big combined square into two squares and two rectangles. Or another example of principles, in another lectures that talked about Pythagorean triples, I gave historical context by showing ancient clay using cuneiform script that showed Pythagorean triple in Plimpton 322 which is a Babylonian clay tablet from about 3800 years ago, as old as the pyramids! And the students can check their validity today, by his or her self.

Precisely because this part of the website was so custom tailored to each and every slide in every subject, It's hard for me to try to give you the unifying principles of it without repeating the first part of the book (all the theoretical principles). I hope that it will become more concrete when I will show you real examples in the next chapter.

Tutor

This was the part of the website that addressed students in the university. It was followed the same lines as VideoBooks but the courses were more advanced, taken from classic textbooks for the relevant subjects.

For example I had a course teaching the C programming language, based on the great book C Primer Plus by Stephen Prata who's considered a classic and is also recommended by one of my heroes André LaMothe whom I talked about in the "black box" sub-chapter.

Again, the teaching did not follow the usual screen cast video of the teacher just clicking the menus (albeit zooming in occasionally) because then the student can't do this in his or her own pace (unless they ceaselessly click pause-play), and also it's hard for the student to remember and to internalize it. In my lectures each menu item or action has it's unique clipart which was easier to remember and has enough attention dedicated to it.

BUDS

This project was different from the other parts of The Strulovitz System, because it didn't directly taught the student anything new, it helped the meta-structure of learning, by allowing the student to keep track of him or herself through his or her progress.

The name BUDS came from United States Navy SEAL which is the marine commando of the United States, and the best combat unit in the world. Their Basic Underwater Demolition/SEAL (BUD/S) Training takes 6 months and it's the hardest training in the world.

The reason I chose this name was because my "BUDS" learning tracking system was meant for studying, like keeping track of how many pages you managed to read in this, how many exercises did you solve in that, on a daily basis. But since I wanted to demonstrate the system's efficiency for real, I chose to implement it on myself in a "reality" style campaign, and to track another area of my life: physical training of getting into shape.

So now I will describe how the system worked for me in daily fitness exercises, but you can understand that it would work the same way in a student's math exercises for example.

First I wanted to turn to the best "teachers" in the world in this field (fitness) both for knowledge and more importantly for inspiration and mental resilience. So I watched a documentaries and training videos by SEALs which I consider as the top ranking experts in this field. One was Navy SEALs: BUDS Class 234 which you can also watch on Youtube and it's an amazing series. It follows one course of SEALs in their initial training and it's just amazing and heartily recommended. It illustrates to you the supreme physical toughness of these people and even more than that, their mental stamina and resilience. Like they say at some point: It's mind over matter - if you don't mind, then it doesn't matter! Other examples were excellent instructional videos and books, by Mark de Lisle and Stew Smith both ex-SEAL fitness experts.

The next phase after designing the program and the mental preparation, was the heart of the program itself. The student would get a hosting for Wordpress blog, custom designed to what inspired him or her the most, embedded with a Facebook business page with the same design. The idea was that the student can use peer pressure for this positive cause. We all know how powerful is peer pressure especially among young people is. Of course this was optionally, you could just track yourself privately if you preferred.

So in my blog I first took videos of myself doing all the exercises that I wanted to track: chin-ups, reverse chin-ups, push-ups, sit-ups and squats. I was also tracking my swimming in the

nearby Maccabi swimming pool. I would allow myself one hour to swim as many pool lengths as I could, every ten pool lengths I would switch style (stroke).

All these went daily into my blog, in a constant format: Each line of the post would say what kind of exercise this was and then the number said how many repetitions I did that day. After these lines I would always embed a self vlog video of me talking to the webcam immediately after I got back from the exercise, describing what I did and if there was something special. I also always treated myself for a mini chocolate snack for motivation and also spoiled myself with fresh orange juice, so these also became part of the vlog entries.

The idea was to make an automatic script (it's not very hard to do this in PHP) that would insert your written results into an Excel worksheet where you can very easily and automatically turn them into a graph of your accomplishments to get motivation and better visual tracking. I admit that I never had the time to sit down and program the script (of course if there were customers interested then I would), so I would manually put all the data into Excel and prepare the graphs and upload the ready graphs into my blog and into my custom Facebook page.

Another thing that I uploaded for added motivation and ease of tracking in one glance, was giving myself colorful stickers with various cute smiley's that I pasted on my paper calendar that hangs on the wall. Then at the end of each month I would picture and upload that month's snapshot into the blog and Facebook, to see if I worked hard enough or not. You'll be surprised but even if no one looks in your blog, it gives you a lot of motivation.

Another thing that was part of my "BUDS" project was using Gantt charts in programs like Microsoft Project to plan ahead and track the executing of the students plans. This helps on the large scale, not to leave things to the last minute, which is a typical behavior for people with ADD - to procrastinate (postpone) and then eventually miss the deadline. My experience with Project came from my own military service.

Business Model

These are translations to English of the original slides of the presentation that detailed the business model of The Strulovitz System :

Business Model	Market Attractiveness
	
<div data-bbox="284 808 1315 875"><h3>Is the general market attractive?</h3></div> <div data-bbox="268 920 1299 1032"><p>My general market is giving an alternative to private tutoring. Is there a demand?</p></div> <div data-bbox="568 1081 1230 1115"><p>Report by the Ministry of Education October 2013</p></div> <div data-bbox="568 1122 1310 1155"><p>The rate of people who use private tutors by age groups:</p></div> <div data-bbox="608 1162 911 1274"><p>10th to 11th grade : 46% 7th to 9th grade : 40% 5th to 6th grade : 33%</p></div> <div data-bbox="568 1279 1238 1312"><p>The most common subject is math and then English.</p></div> <div data-bbox="568 1357 1086 1391"><p>Article in TheMarker - December 2013</p></div> <div data-bbox="568 1397 1302 1476"><p>Parents in Israel spend 1,000,000,000 NIS each year on private tutors - that is 250,000,000 US dollars!</p></div> <div data-bbox="276 1585 754 1653"><h4>Is the niche within this market attractive?</h4></div> <div data-bbox="296 1666 762 1733"><p>My niche within this market is students with learning disabilities</p></div> <div data-bbox="392 1809 683 1973"></div> <div data-bbox="927 1585 1270 1653"><h4>Which customer sector is the best?</h4></div> <div data-bbox="863 1666 1142 1722"><p>The best customer sector is people with ADD</p></div> <div data-bbox="863 1744 1134 1816"><p>My personal experience is a proof of the results of my system</p></div> <div data-bbox="863 1839 1182 1917"><p>The percentage in the population is the highest of the disorders (10% of the general population)</p></div> <div data-bbox="1102 1749 1358 1962"></div>	

Unique value proposition



What differentiation (advantage) does the proposition have?

My system has 2 advantages that differentiate it from the competition:

Advantage #1

Using my personal experience with untreated ADD

Advantage #2

The best dish requires the best materials



What positioning (unique impression) will you use?

The main slogan "math without pain" - builds immediate identification

Each of the slogans of the secondary websites, Emphasizes a different side of the system

"Watching TV differently"
According to the best educational shows in the world

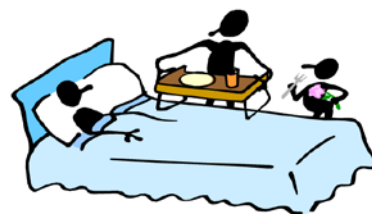
"Watching instead of reading"
According to the best training lectures in the world

"Learn from the masters"
According to the best textbooks in the world



Will the proposition be important for the customers?

Inelastic demand - life saving cure (for ADD)



Profit model



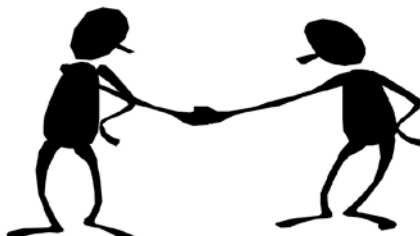
How will you make money from the product or service?

Freemium model (like Cramster)



Sales execution model

Yearly subscription for the whole website in the price of one private tutor session



How can you execute the marketing plan and turn it into actual sales?

The website is operational with a Drupal commerce store where you can purchase Moodle courses



<p>Ongoing Competitive advantage</p> 	<p>Can you create and preserve a substantial competitive advantage?</p> <p>My competitive advantage is the ability to simultaneously understand both worlds:</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>The lecturers world (the scientific material)</p>  </div> <div style="text-align: center;"> <p>The students world (learning disabilities)</p>  </div> </div>
<p>Innovation factor</p> 	<p>Can you innovate faster and better than the competitors?</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Accumulating experience and input from users with Web 2 tools</p>  </div> <div style="width: 45%;"> <p>Integrating new materials and technologies such as Course Assistant</p>  </div> </div> 
<p>Avoiding Traps</p> 	

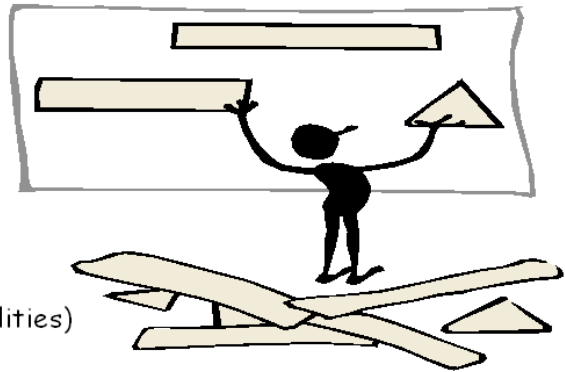
Are there major issues beyond your power that can adversely effect your model, such as government regulations, or fading trends?

The issue of copyright is solved by using the didactics and not the content itself
The copyright test (can one be identified as based on the other) is not fulfilled
My lectures envelope the original content as an intermediary step to understanding

As for the exercises, there are successful websites such as:

Outside Israel: Cramster , Course Hero
Inside Israel: Potrim, Kibinimatika

That solve exercises out of textbooks
(But are not adjusted for learning disabilities)



Graceful Exit



Can the business be sold for a substantial profit without your daily intervention?

The website can continue to function with the existing courses without my intervention

It's based in classical learning materials that have stood the test of time



Thank you for watching!

Frequently Asked Questions (FAQ)

The Strulovitz System's website contained a section where I tried to answer, with the help of the beautiful and lovely model Dana, the most frequent questions. Here are the questions with shortened one liner versions of the original answers:

Q: Who are the professionals behind the system?

A: There are no "professionals" behind the system. Only first hand proven experience.

Q: Who is Nir Strulovitz?

A: Nir, a former programmer and lawyer, specializes in informal special education.

Q: Where did the system come from?

A: The students are afraid of books in English, so let's turn them into videos in Hebrew.

Q: Who is the system meant for?

A: Originally for students with ADD and other learning disabilities, but it can't help anyone.

Q: What is special about it?

A: In each exercise the whole process is explained all over again, without relying on the past.

Q: What differentiates you from the competition?

A: The difference between an average teacher in school and the best teacher in the world!

Q: How do you make your courses?

A: For the best dish you need the best ingredients - we pick the best book in each subject.

Q: Why is the system better than a private tutor?

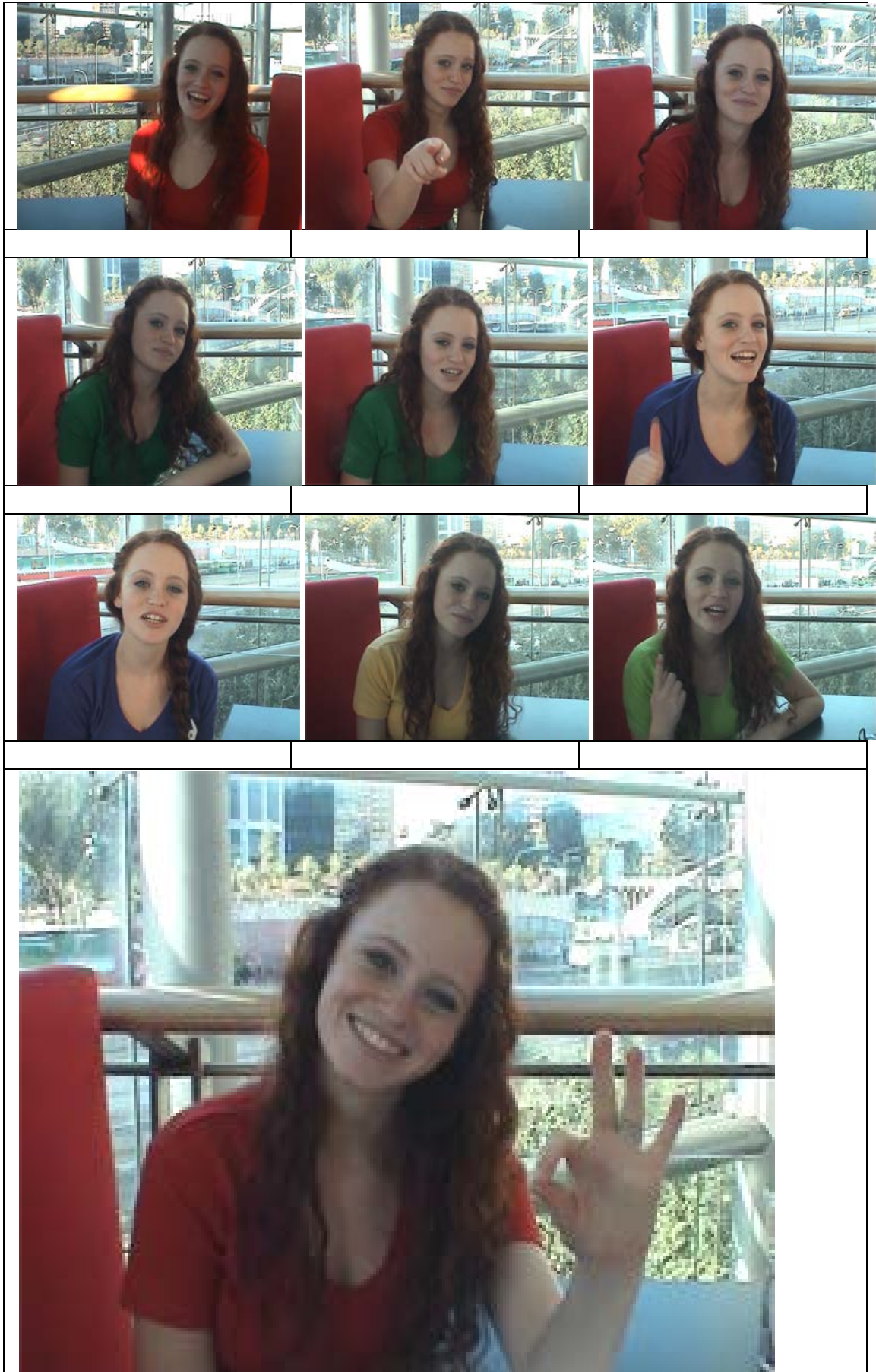
A: A tutor is like the teacher at school at best. The system is at your time, place and pace!

Q: Is it free?

A: Almost all content is open for free as a service to the public - except the exercises.

Q: What does the hand sign mean?

A: It's the diving signal for a-ok, we take care of you when it's hard, and it's also our initials!














Real World Examples

















Note: I apologize that I could not translate all the following presentations from Hebrew, but it's so graphical that I hope the reader will be able to get a rough idea what it looked like.


As mentioned before the actual video lecture had me (by webcam) on the right bottom corner explaining "live" what we're seeing, and sketching with the graphic tablet. Also from obvious reason I can't display here the 3-D rotating intro with the classical music etc.

MacGyver - Science and engineering for children

What you're seeing here is the presentation for the first ever episode of MacGyver - "pilot" - which in my opinion (I love Mac and I've watched all the 7 seasons) is the best MacGyver episode ever!

 <p>פרק 1 – פיילוט מקסימום אס"י</p>	 <p>למה מטפס בונד צריק חבל? עבור המטפס החבל החבל משמש לאבטחה במקרה של נפילה. עד לפני כ-50 שנה הסיסמה הייתה: "לחבוט" אסור ל"פוט", כי לא השתמשו בעיצוני בניינים.</p>  <p>אחרי כל שלב מקסימום תוקע בסלע עיגון ומחבר את החבל. כך בגפילה הוא נופל רק את כפל המרחק לנקודה האחרונה. החבל מחובר לרתמה המפלטת את עומס משקלו על שלח גדול.</p>
 <p>למה משמש אקדח ליקוויס? הליקוויס הוא איתות ממוקד שמעלה את מיקומו של מ' שלקוק להצלה. ב-1942 מלוס נאצי נחת בטעות באנגליה. הבריטים שבו את המרחץ עם אקדח ליקוויס.</p>  <p>הליקוויס יוצר אור חלק שנראה ממלוס, ללא רעש של פיצוץ. הפצוץ יורה את הליקוויס לטעם כדי שיאיר מן ממוקד. כוחות החילוץ מכוונים למיקום האיתות ומצילים את הפצוץ.</p>	 <p>איך פורקים סכין הטלה? בסכין הטלה המשקל מחוזק שווה בשווה בין לבה נחזר לניצב נקרה. פסק ראשונה שרואים את האור השנוצרי המיתולוגי של מקסימום תוצרת ויקטורינוקס.</p>  <p>להבדיל מסכין רגיל, סכין הטלה עשוי כולו מיקשה אחת. באופן אידיאלי מרכב הכובד של הסכין הוא בדיוק במרכזו. כך הסכין יעקוב אחר מסלול מעגלי וקל לניבוי במעופו.</p>
 <p>פירוק טיל עם מהדק נייר מהדק הנייר המתכת מוליך חשמל והמערכת חושבת שהפאנל בפנים ברצת שמוציאים את הפאנל צריק תוק 30 שניות להכניס פאנל חלופי שיסיר מעגל.</p>  <p>המערכת יוצרת שהפאנל שפ כי הוא סוגר מעגל חשמלי. מקסימום משתמש בתכונת מוליכות החשמל של מתכת האלקטרונים לא קשורים לטלוויזיה אלא נעים חופשי.</p>	 <p>קלצניקוב חוט וספרורים מקסימום מארגן הסחה לחילוץ בעזרת מנגנון השהייה מספרורים. הוא מעביר מקל בדומה כך שמקל הדומה יחלף על מהדק ברצת שהחוט ישרף ויקרע.</p>  <p>מקסימום מצית חפיסה שלמה כי האוויר בגובה גיל בחצו. בפאן שלוקח למהבה להתקדם לחוט הוא מתרחק מהמקום. כאשר החוט ניתק הדומה יורה וחייטי האויב רצים למקום.</p>

 <p>השליש האחרון של שמונה עשרה יוצרים לחץ ויציאה בכוח רב. רקה משתמשת בחוק ניוטון מס' 3: לכל פעולה יש תגובה. הרקה מפעילה כוח על השלש שנפלט והתגובה על הרקה.</p>	<p>בניית מנוע רקטי</p> <p>מקסימום מקטין את הקנה של אקדח הפיקוקים לצורת לחץ גלילי. באופן רשמי האקדח סטטי והפיקוק עליו. כאן ההפך: הפיקוק סטטי והאקדח והאנשים עפים.</p> 	 <p>הוא הכי בהיר קצת לפני הפריחה וקצת אחרי הפריחה. התנאים בגובה לא מאפשרים חיים: האוויר לוהט ורעיל לנו. האטמוספירה מורכבת מפחמן דו חמצני וחומצה אפרתית.</p>	<p>האפשר לראות את ונוס?</p> <p>נוסה הינו כוכב הלכת הכי בהיר, ונראה בזמן בעין בלתי מוויית.</p> <p>הדבר הכי חשוב בטלסקופ הוא לשים מסנני שמש בכניסת האור ולא בעיניתו</p> 
 <p>חוסר חמצן בגאזיות הריאה ובמחוז אורגניזם ואף מוות. כל הסמפוטומים של מחלת גבהים מלבד בצקת ריאות. מחלת האינוזאים (נקומפרסיה) תסיסת בוצות של מים.</p>	<p>למה המעלית מווסתת לחץ?</p> <p>הם ירדו 300 רגל (כ-100 מטר) והשוואת הלחצים חיונית לבריאותם. גם כשמים במטוס האוויר בתא הנוסעים נדחס עם אוויר שגבר טיפול.</p> 	 <p>יש נזילה של חומצה אפרתית H_2SO_4 שהיא חומצה חזקה. שני החומרים מאכלים ומסוכנים. הם משמשים למשל לניקוי ביוג. בתגובה הניטרלית ביניהם נוצר מלח נתרן אפרתי Na_2SO_4</p>	<p>מה לה נתרן הידרוקסיד?</p> <p>סודה קאוסטית זה בסיס (ההפך מחומצה) חזק. נוסחתו: $NaOH$</p> <p>תגובה: $2NaOH + H_2SO_4 \rightarrow Na_2SO_4 + 2H_2O$</p> 
 <p>האטומים של אוויר נקי לא רולטים כך שפלטו אור נראה. מקסימום ממלא את האוויר בעשן שיש לו חלקיקים גדולים. כאשר אלה מורעדים על ידי הל"ל הם פולטים אור נראה.</p>	<p>איך לראות לייזר חסר צבע?</p> <p>קודם נבין מה זה צבע: צבע זה תדירות גלל שהציו מסוגלת לראות באופן אופן בחזר נקי קרו שמש היא שקופה, אבל בחזר מאובק היא נראית בגירור.</p> 	 <p>משקפת מכללה מראות כדי לעשות אותה יותר קומפקטית. מקסימום מפרק את המשקפת ומוציא מתוכה את המראה. בעצרת המראה הוא מכון את הל"ל (כמו אור רגיל) חזרה.</p>	<p>איך להרוס מטול לייזר?</p> <p>מקסימום מכון את קרן הל"ל חזרה למקור שלה בעצרת מראה. מקסימום מכיר את הנזיו הממחי על עקרב בטבעת אש שזוף את עצמו אק זה מיתוס!</p> 
 <p>אחר כך הוא פותח את הברז והמים מנפחים את הזניור. למעשה נוצר פה מנוף: הלחץ מן הברז מרים את הקורה. זהו חוק פסקל: לכל כבידה: הלחץ זהה בכל נקודה בגוף.</p>	<p>איך להרים קורה עם מים?</p> <p>מקסימום קושר את קצה הזניור המים, ומניח אותו מתחת לקורה. אין כאן הפרה של שימור אנרגיה: הזניור ירים מרחק קצר יותר אך בכוח גדול יותר.</p> 	 <p>זה נגרם מכך שמכניסים שוב חמצן לאיזור שהוא כבר אפל. במרחב הסגור עדיין יש באוויר חלקיקים זעירים מאוד חמים. שברגע שמתח חלון או דלת יתלקחו בפזוף בבת אחת.</p>	<p>מה זה מלכודת אש?</p> <p>מלכודת אש (בקדרפט) היא איזור פזוף שנגרם כתוצאה מאש. בקדרפט מסוכנת ומפתיעה גם כבאים. יש לאוור את החזר מהנקודה הגבוהה ביותר.</p> 

 <p>חומצה אופרתית H_2SO_4 מייבשת מוציאה מים מסכרו $C_{12}H_{22}O_{11}$</p> <p>H_2SO_4 (לרע) + $C_{12}H_{22}O_{11} \rightarrow 12 C + 11 H_2O +$ חום</p> <p>ואל בגלל החום: $H_2O + SO_3$</p> <p>חומצה אופרתית H_2SO_4 יחד עם סכרו $C_{12}H_{22}O_{11}$</p> <p>שהוא סוכר שולחני (גז סוכר שמורכב מאלוקופ ופרוקטוז), ייצרו מוצק שחור עשיר בפחמן, ובנוסף משקע צהובי שחור.</p>	<p>עצירת חומצה עם סוקולד</p> <p>חומצה אופרתית H_2SO_4 מייבשת מוציאה מים מסכרו $C_{12}H_{22}O_{11}$</p> <p>H_2SO_4 (לרע) + $C_{12}H_{22}O_{11} \rightarrow 12 C + 11 H_2O +$ חום</p> <p>ואל בגלל החום: $H_2O + SO_3$</p> 	<p>בניית פצצת טמן מתרן</p> <p>המתכת נתרן Na מאוז פעילה במגע עם מים (אפילו באוויר / עור)</p> <p>תגובה $2 Na + 2 H_2O \rightarrow 2 NaOH + H_2$ אקסותרמית</p> <p>השלווה היטלנית מתמוססת ואז הנתרן בא במגע עם מים</p> <p>זה יוצר גז מימן H_2 ופני נתרן הידרוקסידי $NaOH$ המוכר.</p> <p>בתגובה הזו משתחרר חום, ואז הנתרן מתלקח ומצית את המימן.</p>  
 <p>אקזייטור מדליק ומכבה את האורות ופני מבין שלה מורס.</p> <p>המסר הכי מפורסם בקוד מורס: 3 קצרים, 3 ארוכים, 3 קצרים.</p> <p>אלה ראשי התיבות SOS ולפי סימן מוסכם למסר הצילו!!</p>	<p>איך להעביר מסר במורס?</p> <p>קוד מורס הוא צופן בינארי פשוט המורכב ממצב דולק וכבוי לסירוגין.</p> <p>ברברה ספנסר אומרת למקסימו: "עשית ככה שבכוחי". באמצעות כפה לשון לחשמה.</p> 	<p>ואם הגעתם עד פה – מניעה לכך נשיקה!</p>  <p>סוף ☺</p>

Sherlock Holmes - English vocabulary for children

This course was based on the BBC version and all the text was copied from Wikipedia. Surprisingly although it was probably the easiest to make, it gained much popularity in terms of Facebook "likes". This here is the first chapter "A Scandal in Bohemia".

 <p>סקנדל בגבוהיה שרלוק הולמס אס טי וי</p>	<p>Who is the client claiming to be? ^{לקוח}</p> <p>The masked gentleman is ^{מכניס את עצמו} introducing himself as Count ^{סוכן} Von Kramm, an agent for a wealthy client.</p> <p>While the currently ^{נשוי} married Dr. Watson is paying Holmes a visit, Holmes is called upon ^{לדבר מסיבה} by a masked gentleman.</p> 
<p>What is the client's real identity? ^{זהות אמיתי}</p> <p>However, Holmes quickly ^{מהר} deduces that he is in fact Wilhelm Gottsreich Sigismond von Ormstein, ^{דוכס} Grand Duke of Cassel-Felstein and the ^{מלך יורש העצר} hereditary King of Bohemia.</p> 	<p>What is the King's secret? ^{סוד}</p> <p>Irene Adler, while she was ^{תקופת פריג/מחלה} serving a term as prima donna of Warsaw's Imperial Opera who now lives in London.</p> <p>It transpires that the King is to become ^{בזירה} engaged to a young ^{נסיכה} Scandinavian princess.</p> <p>However, five years ago ^{קשר} he had a liaison with an ^{למדת} American opera singer,</p> 
<p>What dangers the King? ^{מחשש בסכנה}</p> <p>Fearful that should the ^{אמין} strictly principled family of his fiancée learn of this ^{אני תקיט} impropriety the marriage would be called ^{ניסח} off, he had sought to ^{לחזק/לגייס} regain letters and a</p> 	<p>What have the King already tried? ^{פסלים הנצח}</p> <p>An offer to pay for the ^{ניסה כבד} photograph and letters was ^{סורקה} also refused.</p> <p>The King's agents have ^{מחשש} tried to recover the ^{למדת} photograph through ^{אמצעים כוחני} sometimes forceful means, ^{אניקה פריג} burglary, stealing her ^{לשדור} luggage, and waylaying her.</p> 
<p>Why does he come to Holmes? ^{בא}</p> <p>With Adler threatening ^{מאיימת} to send them to his ^{לשמוע} future in-laws, which Von Ormstein presumes is to ^{חם-חמות} prevent him marrying any ^{מנית} other woman,</p> 	<p>How much will the King pay? ^{פסלים}</p> <p>he makes the ^{הימר בעצמות שש} incognito visit ^{לביקש} to Holmes to request his ^{לחזק/לגייס} help in locating and obtaining the photograph.</p> <p>The King is too ^{בזמנת נפח} bulky for a lady to carry ^{לביקש} upon her person. The King ^{נותן} gives Holmes £1,000 to ^{הוצאות} cover any expenses, while ^{לכסות} saying that he "would give ^{לגבר} one of [his] provinces" to</p> 

<p>Who is Irene's gentleman friend?</p> <p>The next morning, Holmes goes out to Adler's house, disguised as a drunken out-of-work groom. He discovers from the local stable workers that Adler</p>	<p>has a gentleman friend, the lawyer Godfrey Norton of the Inner Temple, who calls at least once a day.</p> 	<p>What funny thing happens?</p> <p>On this particular day, Norton and Adler, travel separately to the Church in Edgware Road. Holmes follows in a cab and, upon arriving, finds himself dragged into the church</p>	<p>to be a witness to Norton and Adler's wedding. Curiously, they go their separate ways after the ceremony.</p> 
<p>Why does Sherlock laugh?</p> <p>Meanwhile, Watson has been waiting for Sherlock to arrive, and when Sherlock Holmes finally arrives, he starts laughing. Watson is confused and asks what is so funny,</p>	<p>Sherlock then recounts his tale and comments he thought his situation and position at the wedding was amusing.</p> 	<p>What does Holmes ask of Watson?</p> <p>Holmes asks whether or not Watson is willing to participate in a scheme to figure out where the picture is hidden in Adler's house. Watson agrees, and Holmes</p>	<p>changes into another disguise as a clergyman. The duo depart Baker Street for Adler's house.</p> 
<p>How does Holmes get "injured"?</p> <p>When Holmes and Watson arrive, a group of jobless men meander throughout the street. When Adler's coach pulls up, Holmes enacts his plan. A fight breaks out between the</p>	<p>men over who gets to help Adler. Holmes rushes to protect Adler, and is seemingly struck and injured.</p> 	<p>How does Holmes fabricate a fire?</p> <p>Adler takes him into her sitting room, where Holmes motions for her to have the window opened. As Holmes lifts his hand, Watson recognizes a pre-arranged</p>	<p>signal and fesses in a plumber's smoke rocket. While smoke billows out of the building, Watson shouts "FIRE!"</p> 
<p>What did Holmes discover?</p> <p>Holmes slips out of Adler's house and tells Watson what he saw. As Holmes expected, Adler rushed to get her most precious possession at the cry of "fire" – the</p>	<p>photograph of herself and the King. Holmes was able to see the hiding place where the picture was kept.</p> 	<p>Who bids Holmes good night?</p> <p>He was unable to steal it at that moment, however, because the coachman was watching him. He explains all this to Watson before being bid good-night by a familiar-sounding youth,</p>	<p>who promptly manages to get lost in the crowd.</p> 

What surprise awaits Holmes?

The following morning,

Holmes explains his findings to the King.

When they reach Adler's house, her maid informs

them that she has departed for the railway

station. Holmes quickly goes to the photograph's hiding spot, finding a photo of Irene Adler alone and a letter for him.



What implication escapes the king?

The King gushes over how amazing Adler is:

"Would she not have made an admirable queen?"

Is it not a pity she was not on my level?" Holmes replies scathingly that

Miss Adler is indeed on a much different level from the King. (by which he means higher - an implication lost on the King).



What does the letter say?

In the letter, Adler tells

Holmes that he did very well in finding the photograph and fooling her with his disguises. She posed as the youth

who bid Holmes good-night. The couple have fled England, but Adler has promised the photo is only for protection



What reward does Holmes ask for?

When he asks Holmes how he wants to be paid,

Holmes asks for the photograph of Adler. Holmes keeps it as a souvenir of the

cleverness of Irene Adler, and how he was beaten by a woman's wit.


😊 10




Algebra 1 by The Teaching Company - Algebra for high school

This course taught high school algebra. The order of the classes and subjects followed loosely The Teaching Company's course. Since it was the "flag" course of the website, I will give you more than one sample :


system of equations 1




מערכת משוואות א
אלגברה 1 – הרצאה 15
ויצא בוקס




תוכן עניינים



זכרון 1



זכרון 2




הצבה = השתלה

A חתיף **A** עולה 2 שקלים יותר מחתיף **B**

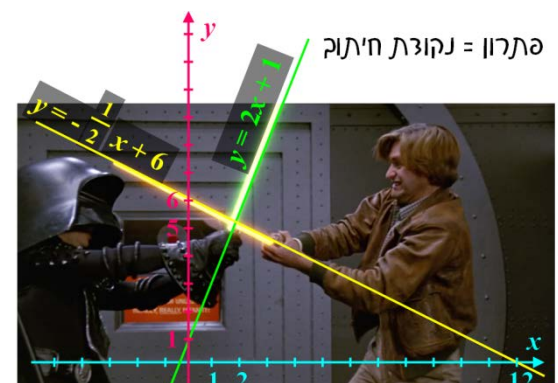
שניהם ביחד עולים 10 שקלים

$$\begin{array}{l|l} A = B + 2 & A + B = 10 \\ A = 4 + 2 & B + 2 + B = 10 \\ A = 6 & B = 4 \end{array}$$


שעון בחנה



פתרון = נקודת חיתוך



מערכת משוואות

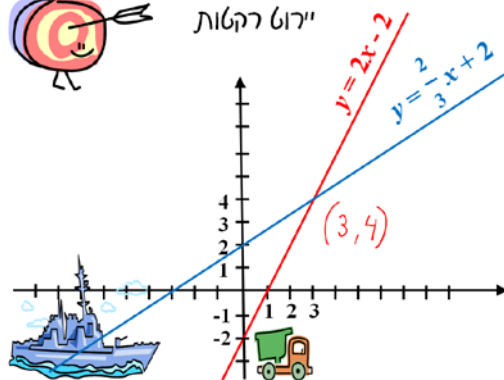


$$\begin{array}{l|l} y = -\frac{1}{2}x + 6 & y = 2x + 1 \\ 2x + 1 = -\frac{1}{2}x + 6 & y = 2 * x + 1 \\ \frac{5}{2}x = 6 - 1 & y = 2 * 2 + 1 \\ \frac{5}{2} * \frac{2}{5}x = \frac{2}{5} * 5 & y = 5 \\ x = 2 & \end{array}$$

פלנקס "צאאק"



"ירוט רקטות"



פתרון = נקודת מפגש

$$y = 2x - 2$$

$$y = \frac{2}{3}x + 2$$

$$\frac{2}{3}x + 2 = 2x - 2$$

$$y = \frac{2}{3} * x + 2$$

$$4 = \frac{4}{3}x$$

$$y = \frac{2}{3} * 3 + 2$$

$$\frac{3}{1} * 4 = \frac{3}{1} * \frac{4}{3}x$$

$$y = 4$$

😊 10

$$x = 3$$

Pythagorean theorem

משפט פיתגורס

אלגברה 1 – הרצאה 25

ויכוח בוקס

PHYLOLAVS

תוכן עניינים

משפט פיתגורס

משפט והוכחה

חוכמה עתיקה

משפט פיתגורס

משולש ישר כות

90°

הצלע הכי גדולה

ניצב

ניצב

משפט פיתגורס

$a^2 + b^2 = c^2$

$3^2 + 4^2 = 5^2$

הוכחה של אריאבהטה

ריבוע פחות ארבעה משולשים = ריבוע פחות ארבעה משולשים

$a^2 + b^2 = c^2$

$6^2 + 8^2 = c^2$

$36 + 64 = c^2$

$c = 10$

שאלה פיתגורית

$a = 6$ $b = 8$ $c = ?$

$a^2 + b^2 = c^2$

$6^2 + 8^2 = c^2$

$36 + 64 = c^2$

$c = 10$

מצאת אורב ניצב

$a^2 + 144 = 169$

$a^2 = 169 - 144$

$\sqrt{a^2} = \sqrt{25}$

$a = 5$

$a^2 + b^2 = c^2$

$a^2 + 12^2 = 13^2$

המרחק בין הכרמל לים

$c = 355$

$a = 130$

$b = ?$



מרחק הכרמל מהים

$$a = 130 \quad b = ? \quad c = 355$$

$$\begin{aligned} a^2 + b^2 &= c^2 \\ 130^2 + b^2 &= 355^2 \\ 16900 + b^2 &= 126025 \\ b^2 &= 126025 - 16900 \\ b^2 &= 109125 \\ b &= 330.34 \end{aligned}$$



קו אווירי



$$\begin{aligned} a &= 137 \\ b &= 1720 \\ c &= ? \end{aligned}$$



חישוב מרחק אווירי

$$\begin{aligned} a^2 + b^2 &= c^2 \\ 137^2 + 1720^2 &= c^2 \\ 18769 + 2958400 &= c^2 \\ c^2 &= 2977169 \\ c &= 1725.45 \end{aligned}$$

שלוש בעולם העתיקה

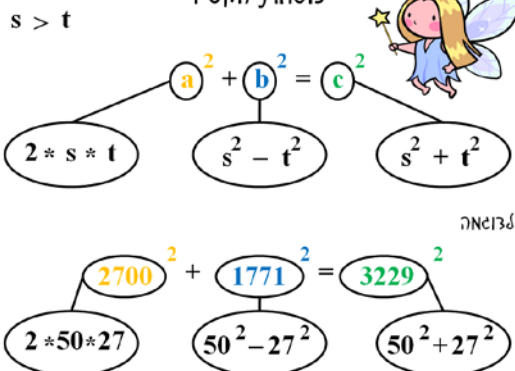
$$a^2 + b^2 = c^2$$

פיתגורס 322 - שנת 1800 לפני הספירה



a	b	c
119	120	169
3367	3456	4825
4601	4800	6649
12709	13500	18541

נוסחת הקסם



בניית הנוסחה הבגלית

$$\begin{aligned} \text{משהו} &+ \text{משהו} = \text{הסכום של שניהם} \\ s^2 &+ t^2 = s^2 + t^2 \end{aligned}$$

$$\begin{aligned} \text{משהו} &+ \text{משהו} = \left[\begin{array}{c} \text{הסכום של שניהם} \end{array} \right]^2 \\ s^2 &+ t^2 = (s^2 + t^2)^2 \end{aligned}$$

נכריח את 33 ימין להיות ריבוע


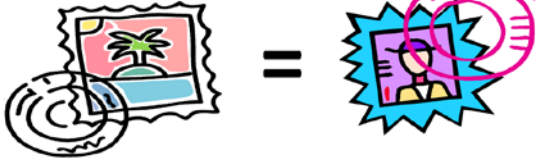
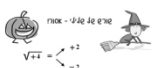
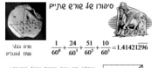









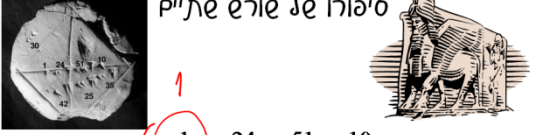
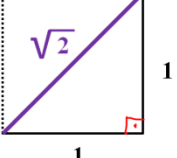




המשק בניית נוסחה

$$(x^3)^2 = x^{3 \cdot 2}$$

$$\begin{aligned} (s^2 + t^2)^2 &= s^4 + 2s^2t^2 + t^4 \\ (s^2 - t^2)^2 &= s^4 - 2s^2t^2 + t^4 \\ \hline (s^2 + t^2)^2 - (s^2 - t^2)^2 &= 4s^2t^2 \\ \left(\frac{c}{(s^2 + t^2)} \right)^2 &= \frac{a}{(2st)^2} + \frac{b}{(s^2 - t^2)^2} \end{aligned}$$






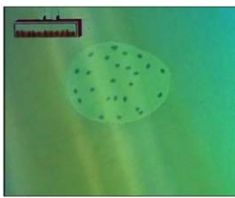





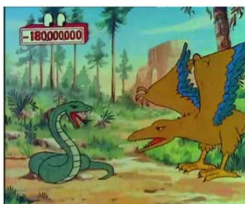


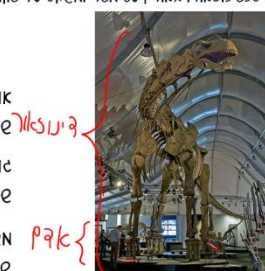
Radical Equations

<p>משוואות עם שורשים אלגברה 1 – הרצאה 33 ויצאו בוקס</p>  	<p>תוכן עניינים</p> <div>  <p>שורש של שני-י - אסור!</p> $\sqrt{x+4} = \begin{cases} +2 \\ -2 \end{cases}$ $\sqrt{0} = 0$ <p>לג'מבר - לא</p> </div> <p>פתרון משוואה עם שורשים</p> <div>  <p>הסבר על שורש שניים</p> $\frac{1}{100} = \frac{24}{100} = \frac{31}{100} = \frac{19}{100} = \frac{14042356}{100}$ <p>הסבר על שורש שניים</p> $\frac{3}{10} = \frac{3}{10} = \frac{3}{10} = \frac{3}{10} = \frac{3}{10}$ </div> <p>בזיקת פתרון חיצוני</p> <p>הוכחת אי-רציונליות</p>
<p>שורש של שני-י - אסור!</p>  $\sqrt{x+4} = \begin{cases} +2 \\ -2 \end{cases}$ $\sqrt{0} = 0$ <p>לא מוגדר $\sqrt{-4}$</p>	<p>בידוד והעלאה בריבוע</p>  $\sqrt{x} + 2 = 8$ $\sqrt{x} = 6 \quad / \quad ()^2$ $(\sqrt{x})^2 = (6)^2$ $x = 36$
<p>חלקה ושורש הפכי</p>   $\sqrt{x+2} = 8 \quad / \quad ()^2$ $(\sqrt{x+2})^2 = (8)^2$ $x+2 = 64$ $x = 62$	<p>כאשר יש שני שורשים</p>  <p>לשחרר אותם נפרדים</p> $\sqrt{3x+2} = \sqrt{x+4} \quad / \quad ()^2$ $(\sqrt{3x+2})^2 = (\sqrt{x+4})^2$ $3x+2 = x+4$
<p>זהירות: פתרון חיצוני</p> <p>הוא נוצר מפעולה לא הפיכה</p>  <p>אם נכפיל את שני האגפים באפס</p> $x+2 = 0$ $0 = 0$ <p>התוצאה נכונה לכל x</p> <p>אם נכפיל את שני האגפים באינסוף</p> $x+2 = 0$ <p>מקבלים שני פתרונות</p> $x \cdot (x+2) = x \cdot 0$ <p>פתרון -2 ופתרון חיצוני אפס</p> $x^2 + 2x = 0$	<p>להציג במשוואה המקורית</p> <p>לבדוק שאין פתרון חיצוני</p>  <p>העלאה בריבוע של שני האגפים היא</p> $x^2 = \sqrt{-3x+4}$ $x^2 = -3x+4$ <p>פעולה לא הפיכה</p> $x = -2$ $x^2 = 4$ <p>אם $a=1$ $b=3$ $c=-4$</p> $1 \cdot x^2 + 3x - 4 = 0$ $x_{1,2} = \frac{-3 \pm \sqrt{9+16}}{2} = \frac{-3 \pm 5}{2}$ $x_1 = 1 \quad x_2 = -4$

<p>נציג באשוואה המקורית</p> $x = \sqrt{-3x+4}$ <div> <div> <p>נציג $x = 1$</p> $1 = \sqrt{-3 \cdot 1 + 4}$ $1 = 1 \quad \checkmark$ </div> <div> <p>נציג $x = -4$</p> $-4 = \sqrt{-3 \cdot (-4) + 4}$ $-4 = 4 \quad \times$ <p>פתרון חיצוני</p> </div> </div> 	<p>סיפורו של שורש שתיים</p>  <p>חרס בגלי 1700 לפנה"ס</p> $\frac{1}{60^0} + \frac{24}{60^1} + \frac{51}{60^2} + \frac{10}{60^3} = 1.41421296$ <p>באשולש ישר זווית מתקיים משפט פיתגורס:</p> $3^2 + 4^2 = 5^2$ $1^2 + 1^2 = \sqrt{2}^2$ 
<p>סוגו של היפאטוס</p>  <p>היפאטוס – חברה בכת של פיתגורס שילבה את המספרים הרציונליים.</p> <p>המלא רציונליים</p> <p>לדג הריבוע לא פרופורציונלית לאבסולו.</p> <p>או בניסוח מוזרני:</p> <p>שורש שתיים הוא מספר לא רציונלי!</p> 	<p>הוכחה על צדק השלייה</p> <p>א. נניח (בשלייה) ש $\sqrt{2}$ כן רציונלי. אז יש שני מספרים שלמים a, b כך ש $\frac{a}{b} = \sqrt{2}$</p> <p>ב. ננצמ את המספרים a, b עד שהם זרים (שאינן גורם משותף)</p> <p>ג. נשתמש בכלל $\frac{a^n}{b^n} = \left(\frac{a}{b}\right)^n$ ונכתוב $\frac{a^2}{b^2} = \sqrt{2}^2 = 2$</p>
<p>המשק הוכחה יוונית</p>   <p>ז. אחרנו ש $\frac{a^2}{b^2} = 2$ מכאן ש $a^2 = 2b^2$</p> <p>ה. מכאן ש a^2 זוגי כי הוא שווה פעמיים b^2</p> <p>ו. מכאן ש a זוגי (כי ריבוע של זוגי תמיד זוגי)</p> <p>ז. בשלל ש a זוגי, יש מספר שלם k שהקיים $a = 2k$</p>	<p>ההוכחה נמצאת בפודינג</p> <p>ח. נציג $a = 2k$ לתוך שלב ז $a^2 = 2b^2$</p> <p>$b^2 = 2k^2$ מכאן $2b^2 = 4k^2$ כמותר $2b^2 = (2k)^2$</p> <p>ט. $b^2 = 2k^2$ זוגי, מכאן ש b^2 זוגי, ואם b זוגי</p> <p>י. לפי שלב ו ושלב ט אם a זוגי ו b זוגיים. כמותר הם לא זרים. זה סותר את שלב ג. התחלנו מהנחה והגענו לסתירה:</p> <p>כמותר ההנחה ($\sqrt{2}$ כן רציונלי) לא נכונה! נשיי.</p> <p>10 😊</p>

Once Upon A Time ... Man - History for children

Kids love this cartoon, but most of the time they don't notice the content. These questions and answers make them do it. Here is the first chapter: "Creation of the world".

 <p>פרק 1 – בריאת העולם ה'ה היה... האדם אס טי וי</p>	<p>מתי נוצר כדור הארץ? אסטרונאוטים חישבו שהוא נוצר לפני בערך 5,000,000,000 שנים. הר אנאפורנה בהימלאיה בנפאל. 8091 מטר. ההר המסוכן ביותר (38% נהרסים בטיפוס)</p>   <p>אם מצגנים מתחומים שונים כולם היעו לטשובות דומות: הם חישבו כמה זמן דרוש לבייתם של העתיקים שבהרים, וכמה היה דרוש לאוקיינוסים לזבור את כוחות המלח הנסוכים</p>
 <p>מתי נוצר התא הראשון? ביוֹלֹגִים חישבו שהוא נוצר לפני בערך 4,000,000,000 שנים. אצות הבועה - היצור החי הראשון ביותר. קוטרה משיג 5 ס"מ.</p>  <p>התא הזה הוא האב הקדמון המשותף לכל החיים וכל הצמחים. כיום חושבים שהוא נוצר מפגיות ברק ב"מרחק" הכימיקלים הקדמון, או שהיתה אבולוציה קודמת של מיקרוביטים דומים ואם באו החיים.</p>	<p>מהם רב תאיים? רב תאיים הם יצורים המורכבים מהרבה תאים ביחד. כוכב ים מלכותי - אורק הפרצות עד 9 ס"מ. בעל מערכת ייחודית דג"א אצלם ע"מ.</p>   <p>התא הוא מציין לבנה בכל זוף של חי או צומח. כיום נהוג למיין את סוגי החיים בצורה אחרת: חידקים אמיתיים, חידקים קדומים, אוקריוטים (חיית צמחים, פטריות)</p>
 <p>מתי יצאו החיים מן המים? יצורים דו-חיים התפתחו כ-4 מיליארד שנים לאחר היווצרות כדור הארץ. צפרדע צצים אצות עיניים - בעלת רגליים מותאמות לטיפוס. ביום משתמשת בהסוואה. דוממאות של דו חיים: צפרדעים, קרפדות, סלמנדרות. כמעט כל הדו חיים מייצרים ארס בגלולות מיוחדות באופן להגנה. ישנם סוגים של דו-חיים שאין להם ריאות והם נושמים רק דרך העור.</p> 	<p>מי שלטו ראשונים ביבשה? בעלי החיים הראשונים ששלטו ביבשה הם הפוחלצים. עכסן (נחש פגמנוס) לפעמים מרשרש ברעשו שבבנו לפני הכשה, אך לא תמיד! "פוחלצים" הם לא רק נחשים - ישנם גם צבים, תניניים ולטאות. הפוחלצים דומים לדו-חיים בכך שיש להם צב קר. אבל לא כמו דו-חיים, עור הפוחלצים יבש וקשה וליכן מותאם ליבשה.</p>  
 <p>מי התפתחו מן הפוחלצים? משפחת בעלי החיים שהתפתחה מן הפוחלצים היא העופות. בס נוצר - היצור המהיר ביותר בעולם. במין לילה לטריף מהירותו משיגה 320 קמ"ש. הנוצות מאפשרות זוף חלק בעל התנצות מעלה לאוויר. במרוצת הזמן אבדו לעופות השיניים כי הן עשיות צצם כבדה. הם פיתחו רגליים קפוציות שבמחיתה פועלות כבולמי לעצומים.</p> 	<p>מי הזינואור הכי גדול? הזינואור הכי גדול היה ברכינואור. כיום מקובל לחשוב שהכי גדול היה ארגנטינואור. באורך 30 מטר ומשקל 70 טון. אורכו 24 מטרים - כמו האורק של 6 מכוניות 10 אחר 10. אובהו 12 מטרים - כמו הגובה של בנין בן 4 קומות. משקלו 50 טון - כמו משקלם של 3 אוטובוסים ביחד.</p>  



מי הזינואור הכי מפחיד?

הזינואור הכי מפחיד היה טירנוזאור רקס.

פירוש שמו של הטירנוזאור ביוונית הוא לטאה עריזה. רקס פירושו מלך בלטינית.



הטירנוזאור מכבד בסרט "פארק היורה" של סטיבן ספילברג.

הטירנוזאור היה טורף-על כולומר לא היה לו אויב טבעי.

חוקרי המאובנים מתלבטים האם היה טורף או אוכל נבלות.



מי ירש את הזינואורים?

מי שבא אחרי הזינואורים היו היונקים הקטנים והפיקחים.

על היא יונה. בטבע צדיים נשארים עם אמה העזיה צד שהם נשארים מניקות החלב.



הזינואורים שלטו בכדור הארץ במשך 100 מיליון שנים.

הם נכחדו כנראה עקב פגיעת אסטרואיד בכדור הארץ.

אחרי הפיצוץ האסטרואיד העלה אבק שחסם את קרני השמש.



מי אבותיהם של הפרימטים?

אבות הקופים ובני האדם הם אוכלי נמלים שחיו בשטחי עצים.

דוב נמלים ענק ניסו בטבע מנמלים וטרמטים - הוא אוכל עד 30,000 נמלים ביום!



דוב נמלים ענק אין שיניים. יש לו לשון ארוכה שמציעה לו 45 ס"מ.

אם הוא נחף לפניה הוא נעמד ומתאונן עם ציפורניו החזקות.

הציפורניים מיועדות לחפור בקני נמלים וכוללות אף להרוג יואר.



מה מאפיין את הפרוקונסוס?

מאפיין הפרוקונסוס הם זוגות עיניים גדולות ומצח גבוה מקודמיו.

זוגות עיניים של פרוקונסוס אפריקני.



הפרוקונסוס נמצא בין הקופים לבין קופי האדם.

השיניים שלו דומות לשיני קוף והמצח שלו דומה לקופי אדם.

לפי צורת השיניים חושבים שהוא היה אוכל פירות.



מהי הגרירה הטבעית?

הגרירה הטבעית פירושה הישרדות המתאימים ביותר.

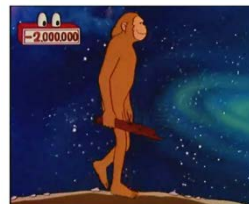
קופי מקוק יפני (קוף השלג) מתאימים את עצמם לסביבה ומבליים במציאות החמים.



אותם פרטים מתאימים לסביבתם יצאו להתרבות.

הדור הבא יהיה מורכב רק מנצאצי הפרטים החזקים.

כך באמצעות הדורות היצורים משתפרים בהתאמתם לסביבה.



מה מיוחד באוסטרלופיתקוס?

המיוחד באוסטרלופיתקוס (האדם הדרומי) הוא ההליכה הזקופה.

שחזור של לופי בת ה-3.2 מיליון שנה לפי העצמות שנתגלו באתיופיה ב-1974.



האוסטרלופיתקוס נמצא בין קופי האדם לבין האדם.

יש לו הליכה זקופה של אדם אבל מוח של קוף אדם.

המאובן המפורסם ביותר נקראת לופי על שם שיר החיפושיות.



מה עשה האדם הקדמון?

האדם הקדמון (פרנתרופוס) השתמש בכלי אבן כדי להיעזר למח העצם.

שחזור של פרנתרופוס בן 2.7 מיליון שנה לפי העצמות שנתגלו בטנזניה ב-1959.



האדם הקדמון נקרא כך בגלל הסתת החפזה ומבנה ראשו.

בעבר חשבו שהאוסטרלופיתקוס לא השתמש בכלים.

כיום חושבים שכן הכינו כלים כמו צרן על ידי סיתות אבן.



מי החליף את האדם הקדמון?

את מקומו של האדם הקדמון תפס האדם המודרני (הומו הבייליס).

שחזור של הומו הבייליס בן 1.75 מיליון שנה לפי העצמות שנתגלו בטנזניה ב-1960.



האדם המודרני נקרא כך בגלל שנתגלו ליצו תמידי כלים אבן.

כיום ידוע שש האוסטרלופיתקוס השתמש בכלי אבן.

מבחינת גודל מוח הוא באמצע בין האדם הדרומי לאדם הקדמון.



איך נצד האזר הווסקר?

האזר הווסקר נצד ג'ו יבשות הודות לכך שפני הים היו נמוכים.

בעיצו הקרח קפאו מימ בקטבים וכך אבה פני הים ירד ואיפשר מעבר.



בעיצו הקרח פני הים ירדו ב-100 מטר מתחת לטובהם כיום. קבוצה של הומו הבייסי יצאה מאפריקה דרך סיני של היום.

קבוצה אחרת חצתה ברפסודות ג'ו האיים לדרום חצי האי ערב.



מי היה האזר הקדמון?

האזר הקדמון נקרא הומו ארקטוס כלומר האזר הפקוף.

האובניים המקוריים של פיתקנתרופוס ארקטוס (אזר ג'אווה) שהתגלו ב-1891.



הומו ארקטוס נחשב לאבי האזר. מה מבדיל אותו מזמון האזר? יכולת הדיבור והיכולת להניע את האזנה כצבע נגדית.

כך בניסוד לקופים הוא יכל לתפוס בנשק: מקל ואף רוחות.



למה חשוב להכיר צמחים?

חשוב להכיר צמחים כי חלקם טובים למאכל ואחרים רעילים.

שאמאן (רופא אייל) של שבת בפרו בג' צמחי מרפא ביער



שבטים מבודדים ביער השס למדו מניסיון על צמחי מרפא.

אם אנו משתמשים ביער ומאון הצמחים העצום לייצור תרופות.

לאת רק אחת הסיבות שחייבים לשמור על יערות השס.



איך עולרת האש לאזר?

האש עולרת לאזר בביוסל מלון, בהשנה מטרופים ומהקור.

ברפל (פלדה, פיריל) מפיק ניצוף חם כאשר מכים אותו באבן פכוכיתית (זור, קוורץ).











בהתחלה האזר לקח ושימר עץ שחל אש שהוצתה במקרה (ברק). אחר כך הבחין בהליכה בחושק בניצודות מפעית אבן באבן.

אם חיכוך על רק במשטח קשה יוצר אש. 😊

The Hitchhiker's Guide to the Galaxy - English Grammar for high school

Youth often quote phrases from cult movies, why not make it useful? Here the teenagers learn present continues with the first chapter from this classic.

 <p>1. Present continuous (I am doing) אנצ'יק הטראנספוטט לטלדקסיה טל טל</p>	<p>Present continuous (I am doing) אני באנצ'ע לטעלות משהו הפעולה לא הסתיימה עדיין.</p> <p>הצורה של הווה מתמשך: am / is / are + ing</p> <p>Thereafter, staggering semi-paralytic down the night streets he would often ask passing policemen if they knew the way to Betelgeuse. The policemen would usually say something like, "Don't you think it's about time you went off home sir?"</p> <p>"I'm trying to baby, I'm trying to," is what Ford invariably replied on these occasions.</p> 
<p>Present continuous הצורה של הווה מתמשך:</p> <p>I am (= I'm) driving he/she/it is (= he's) working we/you/they are (= we're) working</p>  <p>"I'm not panicking!" "Yes you are." "Alright so I'm panicking, what else is there to do?"</p>	<p>Present continuous אפשרות 1: הפעולה קורית עכשיו באותו מנעו זמנא אנצ'יק</p> <p>"My God they are! They're knocking my house down." What the hell am I doing in the pub, Ford?" "It hardly makes any difference at this stage," said Ford, "let them have their fun." "Fun?" yelled Arthur. "Fun! He quickly checked out of the window again that they were talking about the same thing."</p> 
<p>Present continuous אפשרות 2: הפעולה לא בהכרח קורית תוך כדי זמנא אנצ'יק</p> <p>I am reading an interesting book at the moment.</p> <p>אני באנצ'ע הקריאה ולא סיימתי.</p> <p>"What's so unpleasant about being drunk?" "You ask a glass of water." Arthur thought about this. "Ford," he said. "Yeah?" "What's this fish doing in my ear?" "It's translating for you." It's a Babel fish. Look it up in the book if you like."</p> 	<p>Present continuous אפשרות 3: הפעולה קורית עכשיו באותו מנעו זמנא אנצ'יק</p> <p>"So what you're saying is that I write poetry because underneath my mean callous heartless exterior I really just want to be loved," he said. He paused. "Is that right?" Ford laughed a nervous laugh. "Well I mean yes," he said, "don't we all, deep down, you know ... er ..." The Vagon stood up. "No, well you're completely wrong," he said, "I just</p> <p>write poetry to throw my mean callous heartless exterior into sharp relief. I'm going to throw you off the ship anyway. Guard! Take the prisoners to number three airlock and throw them out!"</p> 
<p>Present continuous אפשרות 4: הפעולה קורית עכשיו באותו מנעו זמנא אנצ'יק</p> <p>"My God," complained Arthur, "you're talking about a positive mental attitude and you haven't even had your planet demolished today. I woke up this morning and thought I'd have a nice relaxed day, do a bit of reading, brush the dog ... It's now just after four in the afternoon and I'm already thrown out of an alien spaceship six light years from the smoking remains of the Earth!"</p> <p>today this evening this week נעם You're working hard today</p> 	<p>Present continuous אפשרות 5: הפעולה קורית עכשיו באותו מנעו זמנא אנצ'יק</p> <p>"Ford," he said, "you're turning into a penguin." Stop it." Again came the voice. "Two to the power of seventy-five thousand to one against and falling." Ford waddled around his pond in a furious circle.</p> <p>Is your English getting better? IK The population of the world is rising very fast.</p> 

C Primer Plus by Stephen Prata - C language for the university

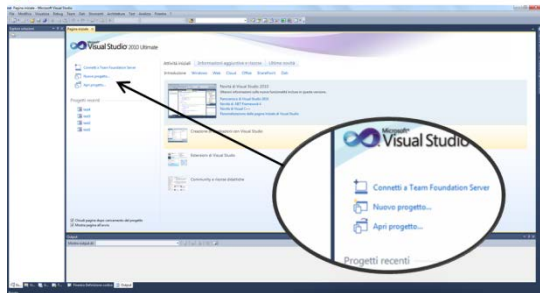
In this first chapter we are getting ready and learning to set up the Integrated Development Environment (IDE) which is the program maker, and make a "Hello World" first program! We also allow the student the freedom of choice between 2 IDEs : Borland and Microsoft.

<p>פרק 1 - מתכונני</p> <p>שפת סי טוטור</p> 	<p>תוכן עניינים</p> <div>  <p>סביבת ויליאם סי</p> </div> <div>  <p>מהי שפת סי?</p> </div> <div>  <p>סביבת סי בילדר</p> </div>
<p>נאיה באה סי?</p>  <p>היא מבוססת על שפת B של קו תומפסון, PC הוא עובד בל.</p> <p>שפת C שימשה אותך ליצור את מערכת ההפעלה יוניקס.</p> <p>פסקל נוצרה לעיבוד תכנות וביסיק נוצרה ליצירת אנשים.</p>  <p>מסמאל לימין: קו תומפסון, זניס ריזין, ונשיא ארה"ב קלינטון מעניק להם פרס.</p>	<p>מה הייתרונות של סי?</p> <p>שפת C היא חובנית, קומפקטית (32 מילות מפתח), יעילה ואמינה.</p> <p>שפת סי שימשה ליצירת האפליים בסרט מלחמת הכוכבים שבו של היצי" החקור.</p>  <p>היא מכוננת לתכנות פרוצדורלי, לא ספטי / Jump / Goto.</p> <p>לשפת C יש ליבה קלה: קל להעביר למערכת הפעלה אחרת.</p> <p>קרובה לחומרה (סיביות ואזורים). אפשר לנחוס הרבה לכל פקודה.</p>
<p>מה החסרונות של סי?</p>  <p>עקב החופש הרב שהיא מאפשרת, התכנת צריך להיות אחראי.</p> <p>האמינות של השפה מאפשרת לכתוב קוד נחוס ולא קריא.</p> <p>הכוח הרב של מצביעים בשפת C מוביל לטעויות קשות לעיתים.</p> <p>החופש בהחלה בין סוגי נתונים, מצריך עינות של התכנת.</p>  <p>תחרות הקוד המפורסם והמבולבל של C נערכת מדי שנה. מה זה אומר...?</p>	<p>למה לעמוד סי?</p> <p>בשפת C כתובה מערכת ההפעלה הנפוצה בעולם והחון מוצרי תוכנה.</p> <p>מערכת ההפעלה יוניקס שמפיעה את האינטרנט כתובה בשפת C.</p> <p>משחק המחשב המפורסם קווייק שנחשב פריצת דרך בטכנולוגיה, נכתב בשפת סי.</p>  <p>שפת סי פלוס פלוס היא שפת סי עם תכנות מונחה עצמים.</p> <p>שפת ג'אווה וסי שארפ הן שפת סי פלוס פלוס עם אופף בל.</p>
<p>שליבים בכתובת תוכנית</p>  <p>אפיון, תכנון, כתיבה, היצור (קומפילציה), הרצה, בדיקה, תחזוקה</p> <p>אפיון הצרכים מונחים כלליים. תכנון ממשל איך לייצג מידע.</p> <p>קוד מקור (שפת C) נראה כמו אנגלית. קוד הרצה (בינארי) נראה כמו 0 ו-1.</p>  <p>כתיבה זה תרגום התכנון ל-C. היצור: תרגום קוד C לקוד הרצה.</p> <p>קובץ הרצה exe אפשר להפעיל. בדיקה: אין תוכנית בלי באיטו.</p>	<p>איזו סביבת פיתוח?</p> <div> <p>C++ Builder</p>  </div> <div> <p>Visual C++</p>  </div> 



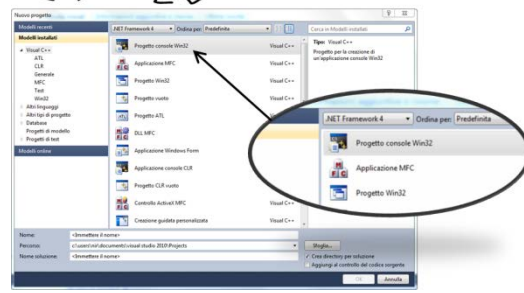
ברוכים הבאים לויז'ואל סי!

לוחצים משאטל נמצאה: פרויקט חדש.



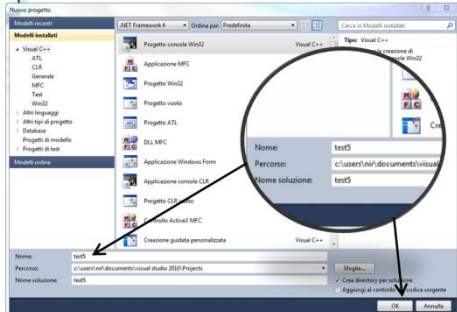
פרויקט חדש

לוחצים על הראשון: פרויקט מסוג win32



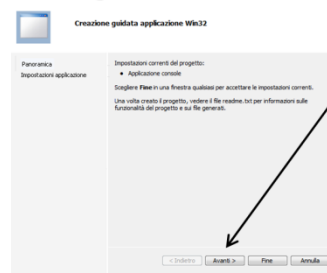
נותנים שם לפרויקט

מקליצים שם לפרויקט ולוחצים OK



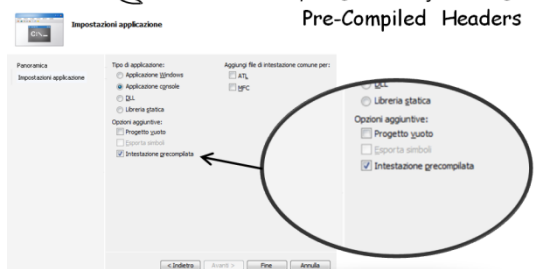
אסף יצירת פרויקט

לוחצים Next



קבצי "תקורה" מהוזרים מראש

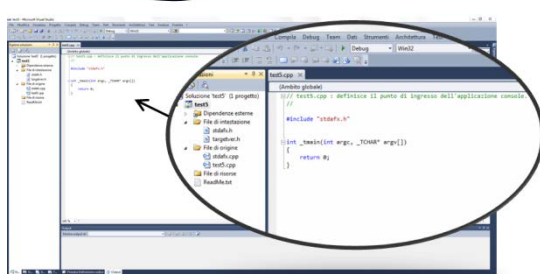
חשוב להסתכל איפה שמונים 'Pre-Compiled Headers'



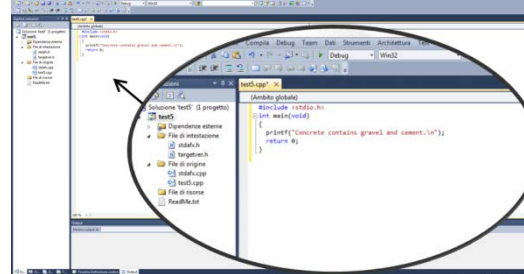
נבואה שלא יהיה V



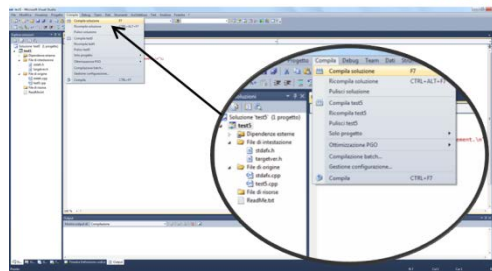
מחיקת טקסט אוטומטי שלהם



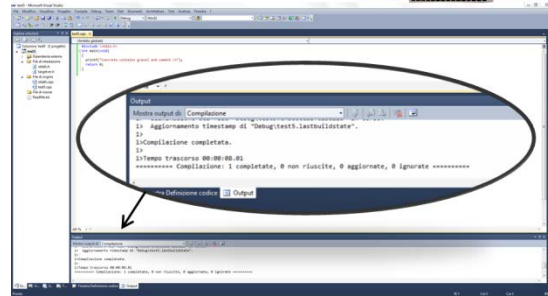
הזבחת טקסט יצני שלנו



קימפול (היצור)
בתפריט
בוחריק Compile Solution



הקימפול עבר בהצלחה

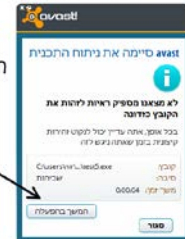


לאשר לתוכנות הגנה להפעיל



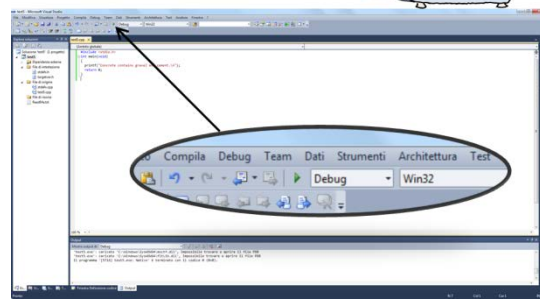
חנות אש

אש וירוס

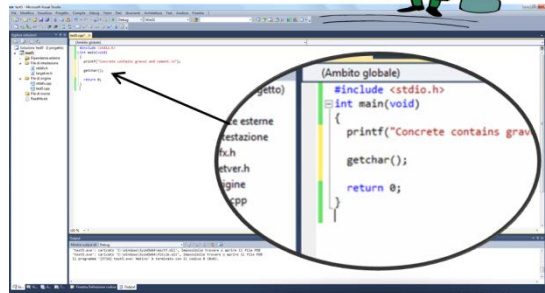


הפעלה (הרצה) של התוכנית

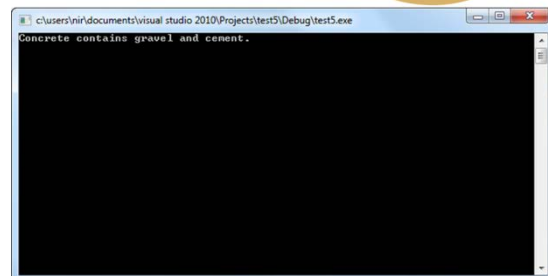
נחיצה על המושג הירוק



הוספת שורה לתוכנית
שהיא תחכה לקלט מהמשתמש



התוכנית בפעולה

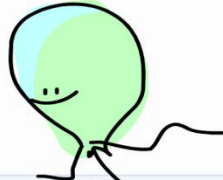
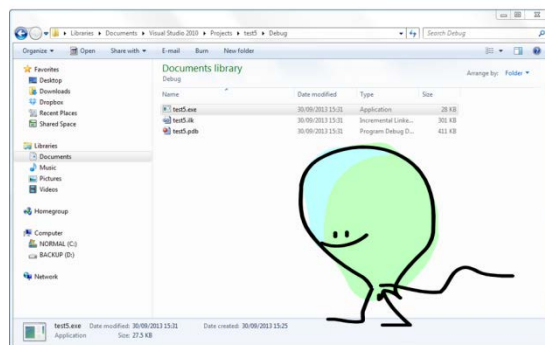


עשינו תוכנית עם וילואה סי



ברוכים הבאים לסי בינדר!

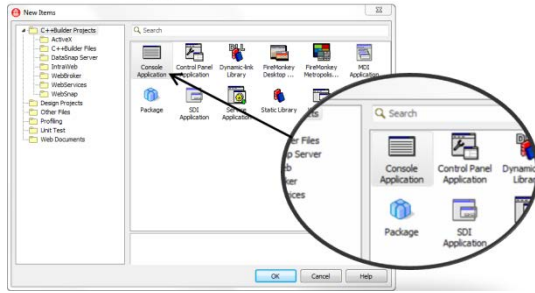
נחזיק משאב למענה: פרויקט חדש.





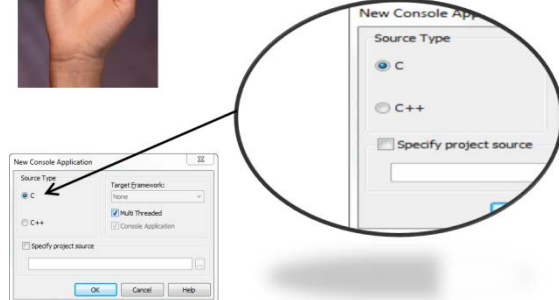
פרויקט חדש

לוחצים על הראשון: אפליקציות Console

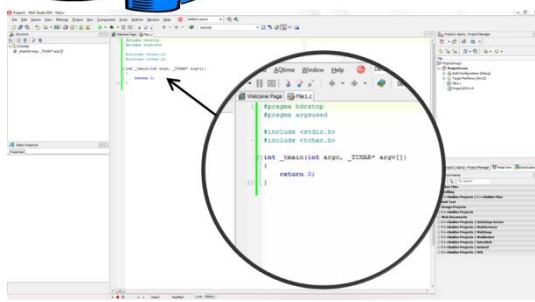


מסמך שפת C

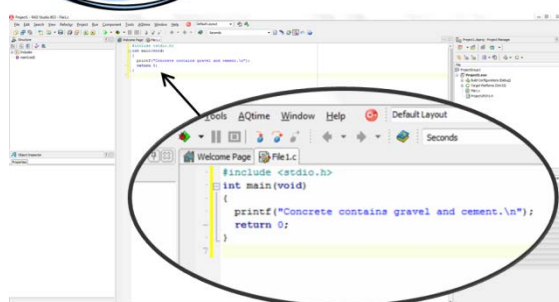
בזמנים שהכפתור רגיל מסומן ליד C



חתימת טקסט אוטומטית שלהם



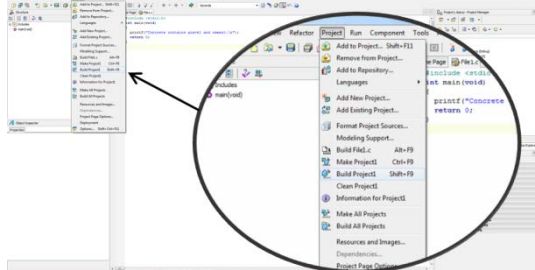
הזרקת טקסט ידני שלנו



קימפול (היצור)

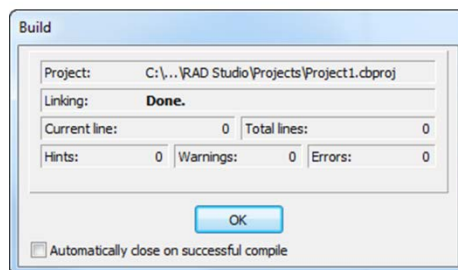
בתפריט Project

בוחרים Build Project1



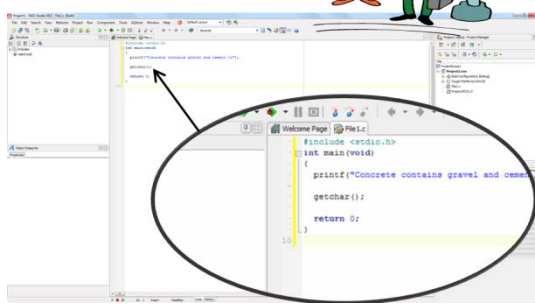
הקימפול עגר בהצלחה!

לוחצים OK



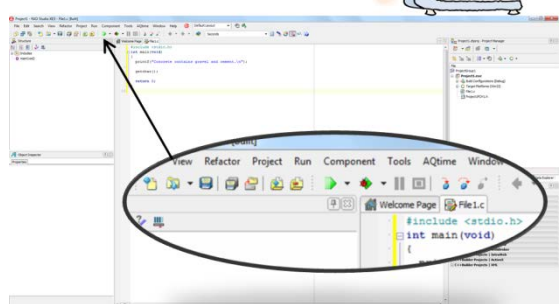
הוספת שורה לתוכנית

שהיא תחכה לקלט מהמשתמש

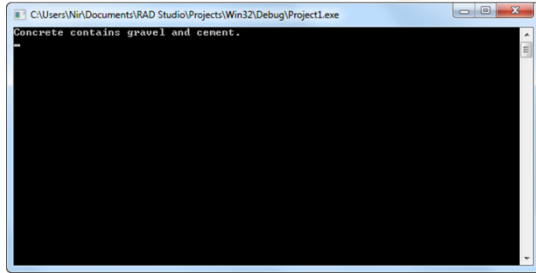


הפעלה (הרצה) של התוכנית

לחיצה על המסומן הירוק



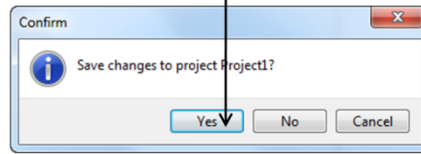
התוכנית בפעולה



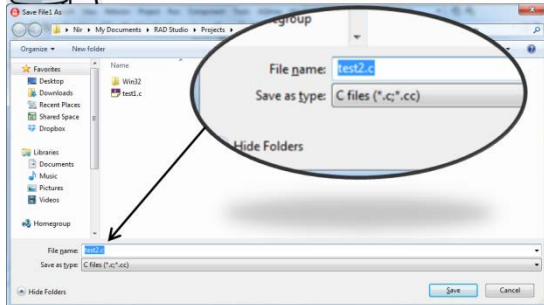
שמירת הפרויקט



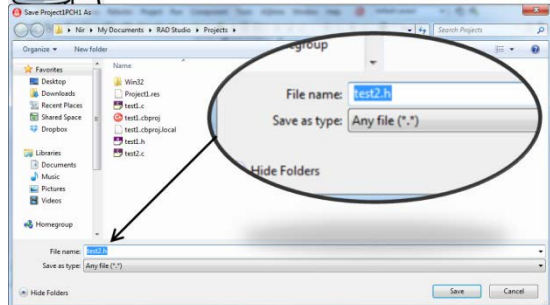
לחצו Yes



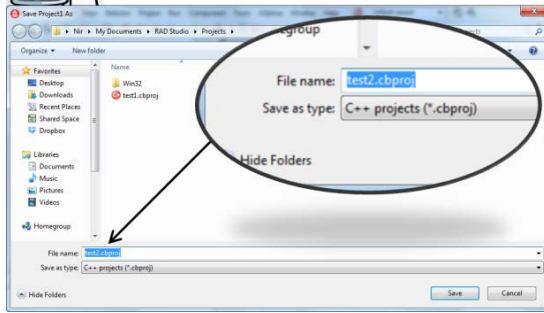
נותנים שם לתוכנית



נותנים שם ל"היזר"



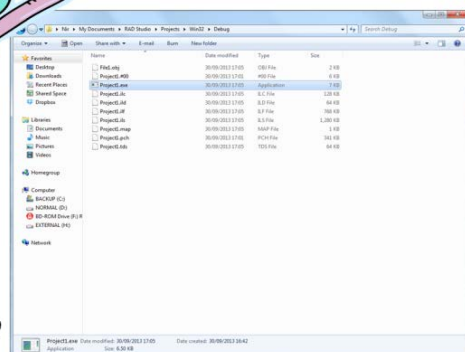
נותנים שם לפרויקט



עשינו תוכנית עם סי בי צרדז!



פיו 😊



Reality Check - Public Reception

For this part I have to thank again (I owe him a lot already) my good friend Yuval "Yuvi" Nevo, who convinced me to check if there is a "market" at all to this free service, so that I will not work and work in vain. Thank you Yuvi!

First Generation

When the day arrived that I wanted to share what I created with the Israeli public, I took a few steps to do that.

First I printed advertisements using my printer at home, pointing people to my website with the title: "the free substitute for private tutors!" where I also prepared on the bottom small slips of paper ready to be torn and kept by potential customers, with the website address. You can't just hand them on traffic lights etc, because then you get a 600 NIS (like 150 USD) fine from the municipality. And also you can hang them on the city council billboards themselves, because again there is a fine. So I posted them on the few open to the public billboards that are allowed. The competition on those is tough with other people (I guess especially private tutors and competitors) tearing down your advertisements. Still I was persistent and reckon my ads had about 80% up time because I replenished them day and night. Still there were no phone calls nor emails from these advertisements.

Then I printed in a printing press shop a few thousand A5 black and white paper leaflets (bulletins) describing the fact that the website is free and helps people with ADD at their studies etc. then I walked around the next-door neighborhood Carmeliya from door to door, and put the leaflets in the people's mailboxes. This neighborhood has a lot of young families with kids of all ages, but there was almost no response to that. The whole website content was free, because at the time I wanted to charge money, as an annual subscription in a Freemium model - if someone wanted to enjoy the exercises in addition, then they had to pay. The payment was defined as the price of one meeting with a private tutor in the Carmel area (which is 100 NIS - about 25 dollars) per a whole year, and this gave the student unlimited access to all the courses on the website for one year starting from the payment.

No one contacted me, except one mother who saw me while distributing and asked me if I also do tutoring. I said sure, but then she didn't contact me (eventually she called not long ago after a few years!). Another person who called wanted tutoring for his son who needed to learn organic chemistry. Since I didn't know any organic chemistry at the time, sadly I had to turn him down. So to sum it up out of a few thousand leaflets, no one used the website.

Another thing that I tried was advertising this free service for the community in forums and organizations that were supposed to be interested in it, like forums about ADD and education, and organizations of the same nature. All the organizations just turned me down even though this was completely free for them and helped their cause. Most of the forums didn't erase my free service for the ADD community post.

But the biggest forum in Israel for this, called Tapuz, showed the ugliest side of what can be called I guess the "ADD industry". This forum was run by the "professionals" who were making excellent money from all these poor people with ADD: Shrinks, pharmacists, diagnosing experts, etc. They said that I can't publish this unless I pay for it as a commercial

(which was expensive). So I asked them on the email if this is not news for the community they are supposed to serve, a new free website that helps in a unique and contributing way especially for this community - then what is? In return their lawyer gave me a threat letter. Being a lawyer myself and positive of my moral and legal standing here, I gave him a threat letter back. After this they posted my post. But again, there was no reply at all from the community, also in the other forums!

So next I decided that I need to turn this up a notch, and try to get viral among the kids themselves. So I printed in printing press shop a few totally different leaflets (bulletins) that were supposed to address the kids themselves. It focused on Nerd's Guide which as you may remember was my website for teens in high school. The flyer said that whoever will "like" the Facebook page of the website would get in a lottery (raffle) where one of them will win an expensive scientific computer (which I bought especially for that in the Technion's shop) that can help them at school, free of charge!

So I tried this in two big high schools near my home, Ironi Hey (where I studied myself as a teenager) and Hugim. The kids would take the paper and 90% of them threw it on the floor after a few meters. From a distance I could hear them laugh about the name Nerd's Guide. Also they laughed about the calculator as if they don't need it. It goes without saying that almost no one gave "likes" to the Facebook page.

What I meant when I chose this name was that I am a nerd (which I am and proud of it), and it was really the secret techniques of the nerds (that I told you about already in this book) that I incorporated into my system. The Nerd's Guide meant that I the nerd guide them the students. I was aware that a few people might interpret this the other way around, like they are the nerds, but given that the largest publication in the world on these matters is called "For Dummies", I thought it wouldn't pose a real problem.

This was very disappointing but it was outdone by the teachers themselves. When teachers came to exit the gate of the school (I was standing in the public street - about one meter outside of the school area, handing leaflets to people who came out), most of the teachers responded like I was handing the students crack cocaine! My only logical explanation for this was that they were afraid that I would harm their income from private tutoring (In Israel teachers earn relatively little, and rely a lot on tutoring privately at home in the after school hours).

In my own past high school Ironi Hey they even called the police! When the police patrol car came with two policemen, I insisted to stay there because this is a public street, and of course the police left as they came, and I kept handing out papers. This was even more insulting than the kids response! Of course as I told the teachers time and time again, I did pick up all the leaflets that the kids threw in the public street on the floor.

Second Generation

This time I was a lot more sophisticated and polished about the marketing process. First of all I decided that the websites needed nicer faces than mine, because since I was the one who did everything (both technically and pedagogically including giving all the lectures), there was way too much "me".

So I designed a new logo for the website which was my left hand making the sign for a-ok of divers (open palm and then touch the tip of your forefinger with the tip of your thumb. This gave a relaxing message - are you ok? ok! and also looked like the letters "shin" (Sh) and "samech" (S) which in Hebrew are the acronym for The Strulovitz System ("Shitat Strulovitz"). The previous logo was also like that because the doughnut was supposed to remind the student the first letter of the long name ("Samech" looks like O) for easy search with google auto-complete, but this was slicker.

So what I wanted was to have beautiful young models (ideally high school girls) to model for the website illustration images (which in the future I planned to replace with real classrooms photographs of real students that really used my system). So what I did was contacting the best business in Haifa for printing custom shirts called Leipziger. I ordered like 10 T-shirts and a few Sweatshirts, in various lively colors, all of them had the same design: A small logo in the front on the left chest above the heart, and a big logo on the back, of course it was the logo of the website. I also used everywhere the terrific slogan that my friend Omer helped me to invent for the my website: Mathematics without pains. This connected immediately to the target population because for them math was like the scariest monster that there is!

Next I wrote to a lot of models in a fashion models for hire website, but no one answered. So what I did was joining a group on Facebook that was about modelling jobs and contacting girls from there. The payment for the 1 hour shoot was 300 NIS (like 75 USD) so I had no problem of finding a few beautiful young girls that agreed to model. So after the shooting that took place in one of the girls' house (her mother was in the living room too), we made a discussion group on Whatsapp and only the pictures that everybody agreed upon were used.

So this took care about the looks of the project that now looked professional with the beautiful models, but it didn't help at all in the "marketing"! In Facebook I watched how the album where I uploaded the pictures with the girls (in addition to embedding them all across the website with the sub-domain logos etc) got thousands of views and there were only a few "likes". And of course none of those "likes" leaked into the page of The Strulovitz System!

So the next thing that I did was again publishing in all the social media and forums like Twitter etc, and especially Facebook which in Israel is by far the biggest. I tried to rally my friends and family but only a small portion of them "liked" it. Then I decided to pay for "likes" so I made two different advertisement campaigns: one was for the economical parent and it showed a normative man with a shirt and tie who went bankrupt and is begging for donation like a beggar with a cardboard sign saying : "I don't have money for private tutors", because my website was meant as a replacement (to a large extent at least) for that thriving billions of NIS per year market in Israel.

Above that picture there was a text saying Parents, don't be "Freiers" and below it said: there is a website who helps studying for free! "Freier" is a key concept in the Israeli psyche, it means someone who sticks to the rules, and in doing so let's others take advantage of him. The closest word that I know in English is the slang word "sucker" (gullible). The difference that the "Freier"'s "sin" is not mere stupidity but sticking strictly to the rules.

This campaign was very successful and each Facebook "like" from this campaign cost me 1 NIS (about 0.25 USD). The second campaign that also was my design was targeting parents with ADD kids, It showed a girl struggling with homework and the writing above and below said something like: Stuck with homework? A new treatment for ADD without drugs! etc. In this campaign the Facebook analytic tools show that each "like" cost me more like 3 NIS (about 0.75 USD). So with these two campaigns combined I managed to reach a little over one thousand "likes"! But no one contacted me or used the website! The few samples videos that I put on my facebook page got only a few (about 10) "likes" each. This showed the sad fact that the general public did not want to use the website even though it was free and even though they "liked" the idea!

Then I printed a few thousand copies of the better campaign advertisement on high quality "chromo" full color A5 two sided papers, and distributing them again throughout Carmelia neighborhood. Unfortunately again I got the same results - nothing, not one phone call asking for details and not one person watching and using the movies.

In a conversation with my friend Omer which also had startup company himself, and worked in this as a corporate lawyer, and as an entrepreneur himself and as a consultant to companies especially in social media, he explained to me that until I will reach 100,000 "likes" no one will come and open their wallet or purse. I couldn't spend the price of something like my car's cost (it's a brand spanking new Honda Civic that costs in Israel about 130,000 NIS which is about 33,000 USD) on marketing for a website that might or might not succeed!

That's when I gave up on the Israeli public, and decided to turn to the education experts. So the first ones I tried were the Technion. The Technion (which is as I told you, like a tiny MIT) has the "Department of Education in Science and Technology". This is their official name, but it's a mistranslation of the Hebrew name which is the "Department of Education of Science and Technology" so the emphasis is really on how to teach science. They basically research new ways (like computer aided ways) of teaching math and science. If that's not my exact expertise then I don't know what is. This is precisely what The Strulovitz System does! Of course for people with ADD it's a life saver, but even for people without any disorder it can help a lot - it just teaches better.

So I wrote e-mails to all the staff of the department and also to a few professors outside of it. Most of them gave a response so irrelevant that it was hard to reply. For instance (I don't mention names because it's not polite) one professor told me that she didn't like the common Hebrew in the lectures, as if I was teaching Hebrew. By the way I'm very articulate in my native mother tongue, it's just that I don't want to alienate the young students by talking in a highly codified variety which is not used for ordinary conversation. The material itself is alien enough for them, I want to bring it home!

Or another professor told me (again, please note, this is not one part of their critic, this was their whole critic on the whole website!) on the email that my definition of Fermat's Last Theorem was not rigorous enough, for example I had to say integer solutions and so on. These so called experts don't understand that for a person with an ADD (or for that matter any student who finds math hard), you have to keep it as simple as you can, forgetting rigorous, bring the rigorous later, first get the understanding, even if it looks sloppy to a professional mathematician. It's like instead of talking a common language, you will let a lawyer phrase something, and he or she will put all sorts of terms and conditions, and the original sentence will be ten times longer and harder to understand. ADD needs the essence - add the pesky details later! If a ADD person sees a large bulk of text, he or she might not read it at all, because it's hard for them to read.

But the head of the department was impressed by the amount of work that I've put into it and was curious and invited me to meet her in her office and explain it to her. She even arranged a permit to enter with my car to the Technion. So I prepared for this meeting very seriously and even made a whole presentation on the business model and concept of the whole thing website, but then she preferred on the meeting to ask me random questions instead of the presentation. Of course I left her a copy of it, but the bottom line was that she said that it's interesting and it can be suitable for another organization, but it's not in their department field. As I mentioned before - this is exactly their field, the principles just teach better, they are effective also for a person without ADD! She encouraged me to try my luck with other department like special education in the university. This was a major disappointment because if she couldn't see the advantages in it, they (who are less serious and smart) surely couldn't.

Another place that I tried was the formal education in high schools. My ex-girlfriend and me were invited to dinner by friends of her family. One of them was a nice math teacher at high school who got curious when I they asked me what I do and I showed her a little. She thought it was very nice and can be used in the Flipped classroom (also known as backwards classroom, or Thayer Method). In this method the students learn the content online at their home computer, and the homework is being done at school with the help and guidance of the teacher.

She told me back then, that in a short while the High School Math Teachers Organization would have a conference just outside Haifa our city (in kibbutz "Yagur") and the subject would be using technology to teach mathematics! and that I should write e-mails to the teachers who arrange this conference. So I wrote emails to all the addresses that she gave me explaining that I think my free project is related very closely to their conference subject (and to their everyday work), and if I can please contribute or be integrated in any way. No one replied except one teacher who was abroad that said she was abroad.

The next disappointment was the Center for Educational Technology (CET or in Hebrew "Matach"). They are the biggest player (in this field) in Israel. They are semi governmental public organization that employs about 450 people creating educational content. They are generously funded and the schools and the parents have to buy their products and services.

So I looked up on the internet especially in social networks like LinkedIn and created a list of about 100 people in Matan whom I thought would be relevant to my goal. Then I e-mailed a personally addressed letter to each and every one, according to their special expertise and background telling them the relevant (for them) part of my free project and asking them if I can in any way integrate or work in cooperation with them. A few answered me that they passed this to "the relevant people". One (I guess she was the relevant people) told me I can make a small advertisement in their external billboard on their website (which will be buried between a few pages others). Again hugely disappointing because they had all the tools to assess correctly what I really created for the public and they didn't. This is my best guess, but yours is as good as mine. Maybe they feared competition or who knows what.

I also tried to approach all the NGO's like The Israel Cancer Association, Nitzan - The Israeli Association for Children and Adults with Learning Disabilities, and so on. I tried to explain in my emails and personal visits that this can be a huge help for people who miss school or university because of treatments and hospitalizing, that this can be used in hospitals and they can learn from home while they recover. That this can save money on private tutoring for the poor families who spend their last dime on life saving treatments, etc. Nobody wanted my free product or for that matter my help in general. I'm sure that if I was offering them money they would happily take it and say "Bring it on! We need all the help we can get!".

Summary

In The Strulovitz System website I was always explaining ideas using the following method: First I would choose the best explanation in the world that would best convey my meaning. And then I would summarize it and make it suitable for people with ADD, taking just the bare essence, simplifying it as needed. So now I would like to do just that. The masterpiece that best describes my message to you is the short story "The Verger" by the famous British writer Somerset Maugham.

Mr. Foreman was a verger (low class church attendant) at the St. Peter's church in Neville Square for 16 years. He was proud of his job, and did a good work. One day the new vicar (priest) found out that Mr. Foreman didn't know how to read and write, and so the vicar fired Mr. Foreman.

This is a very difficult blow for Mr. Forman, He did not know what he should do with himself. He walked home but was distracted by bad thoughts and took the wrong turning. Mr. Forman wasn't a smoker but occasionally he enjoyed a cigarette. He needed one now to comfort him. He looked for a shop to buy cigarettes but there was none.

He realized that probably he wasn't the only man who walks there and wants to buy a cigarette. He concludes that a tobacco shop can succeed there. So he considered the matter carefully, and next day he found a little shop there and started a business selling tobacco and newspapers. Mr. Foreman did very well in business. The next year he opened a second shop in another long street without competition, and so on, until he had a successful chain of 10 shops.

One day the bank manager asked to talk meet him. The manager asked if he will allow the bank to invest his large amount of 30,000 pounds in securities. Mr. Forman said he will not know what he's signing on. The bank manager answered that Mr. Forman can of course read it. Mr. Forman confessed that he cannot read nor write except his name.

The bank manager was very surprised and said: "And do you mean to say that you've built up this important business and amassed a fortune of thirty thousand pounds without being able to read or write? Good God, man, what would you be now if you had been able to?"

"I can tell you that sir," said Mr. Foreman, a little smile on his still aristocratic features. "I'd be verger of St. Peter's, Neville Square."